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Prepared for:

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JIMS' LANDING ACCESS IMPROVEMENTS

Kenai National Wildlife Refuge

FINAL ENVIRONMENTAL ASSESSMENT and FINDING OF NO SIGNIFICANT IMPACT

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FINDING OF NO SIGNIFICANT IMPACT
AND DECISION FOR JIMS' LANDING ACCESS IMPROVEMENTS PROJECT

KENAI NATIONAL WILDLIFE REFUGE
Kenai Peninsula, Alaska

In compliance with the National Environmental Policy Act (NEPA), in accordance with Council on Environmental Quality regulations (40 CFR 1500-1508) and Department of the Interior (43 CFR 46; 516 DM 8) and U.S. Fish and Wildlife Service (550 FW 3) regulations and policies, the U.S. Fish and Wildlife Service (Service or USFWS) has completed an Environmental Assessment (EA) for the proposed Jims' Landing Access Improvements Project.

Introduction

The Service is proposing the Jims' Landing Access Improvements Project to improve access for public recreation and enhance public safety at this facility within the Skilak Wildlife Recreation Area of the Kenai National Wildlife Refuge, while minimizing impacts to wetland and riparian habitats, the Kenai River floodplain, and fish and wildlife resources. In the EA, the Service evaluated the potential environmental effects associated with three alternatives, Alternative C Expand and Improve Boat Ramp and Parking, and Provide Off-site Parking – the Preferred Alternative, Alternative A No Action, and Alternative B Refine Existing Conditions and Provide Off-Site Parking, described below.

Selected Alternative Decision and Rationale

Jims' Landing is a high use boat ramp, used primarily as a landing, or take-out, for drift boats and inflatables (such as rafts) using the Upper Kenai River downstream of Kenai Lake, that also offers access for floating downstream through the Kenai River Canyon to Skilak Lake. Novice boaters, and those unfamiliar with the landing, are often caught off guard by the ramp's location and the high river velocities. Congestion at the ramp and associated staging areas and access road is common and further exacerbates safety issues. Parking capacity is inadequate and requires many users to have to walk across the Sterling Highway to park and retrieve vehicles. The proposed action, Jims' Landing access improvements, will improve the boat ramp launch and retrieval area, and realign roads, expand parking areas south of the highway and add pedestrian walkways to improve vehicle and pedestrian circulation.

The primary goals of this project are to improve public safety and the recreation experience of the Jims' Landing facility by enhancing boat ramp safety, improving traffic circulation, and increasing parking capacity south of the Sterling Highway. Based on the Service's analyses in the EA and with consideration of public comments, the Service selected Alternative C Expand and Improve Boat Ramp and Parking, and Provide Off-site Parking and Off-site Parking Option 1 as the proposed action (hereafter referred to as the Selected Alternative or proposed action).

The proposed action includes: 1) reconstructing the boat ramp area for safer boat launch and landing conditions. The ramp will have two areas, an active ramp area and an area for landing and staging boats. A 48-foot section of ramp, located on the upstream end of the ramp, would be designated as the active ramp area for loading and unloading boats. A backwater area would be created 15 feet landward of the existing ramp to provide reduced river velocity for safer loading and unloading of boats. The remaining 62 feet of the ramp, on the downstream end, would be used for landing and staging boats; 2) changing traffic circulation from two-way to one-way traffic circulation to reduce congestion and facilitate flow during high peak periods; 3) providing additional parking capacity, and pull-off areas to better manage increased recreation use; 4) installing 40" of bank stabilization to reduce erosion, protect the facility and reduce high river velocity at the ramp; 5) installing a viewing platform and pedestrian walkways to provide viewing opportunities and reduce conflicts with vehicles and trailers; 6) expanding temporary access and staging areas; 7) installing new signage, 800 feet upstream of the boat ramp, to alert boaters of the upcoming boat landing. Signage will also be installed at the pull offs to identify the purpose of each; and 8) ADA-compliant parking spaces and restroom facility. The proposed action includes development of an additional 1 acre off-site parking area south of the Sterling Highway (Off-site Parking Option 1). This parking option measures 400 feet by 110 feet and will provide one-way traffic circulation through the parking area with aisles measuring 20 feet wide, and 24 angled trailer stalls measuring 12 feet by 45 feet. The project footprint of Jims' Landing will increase from 1.2 acres to approximately 4.0 acres. The proposed action is fully disclosed in the Final EA.

The proposed action was selected because it best meets the project's objectives to enhance public access, safety, and recreation while minimizing impacts on physical and biological resources. The Selective Alternative meets the Service's mandates under the NWRSAA and Secretarial Order 3356.

Timing and Duration

Construction is tentatively planned to begin in fall 2022, be suspended during winter, and resume in spring 2023. Vegetation clearing will be completed outside of the bird nesting period (generally May 1 – July 15 but varies depending on species) to the extent practicable. Nesting bird surveys would be implemented prior to vegetation clearing. Ramp construction and facility improvements that may limit user access will be avoided or minimized during peak usage season (June-October) to the extent practicable. In order to avoid or minimize impacts to the public and wildlife, initial ramp grading and expansion and final grading and surfacing will be completed in a phased approach before mid-June and/or later in the fall.

Other Alternatives Considered and Analyzed

Alternative A – No Action Alternative and Alternative B- Refine existing conditions and add an off-site parking area are fully disclosed in the Final Environmental Assessment. A brief summary is provided below for each.

Alternative A—No Action Alternative

Implementation of the No Action Alternative would not result in improvement to access and safety. This alternative would continue the Refuge's current management of Jims' Landing. The footprint of Jims' Landing facility is approximately 1.2 acres. The existing facility includes 1) gravel access road with two-way circulation; 2) two pull off areas; 3) 21 standard passenger vehicle spaces; 4) one double vault restroom facility; 5) a boat ramp measuring 100 feet by 40 feet with a 20-percent grade; 6) a potable water well with hand pump. There is an overflow parking lot for commercial operators on the north side of Sterling Highway and a short-term parking or pull-off area on Skilak Loop Road. These features are not part of the proposed project or footprint.

This alternative was not selected, because the No Action Alternative would not meet the purpose and need of the project. Existing conditions would remain and likely deteriorate as recreational use of Jims' Landing continues to exceed its capacity. Recreation experience would also continue to diminish due to the congestion at the boat ramp and lack of safer boat usage of the landing. In addition, high river velocities would continue to make boat launch and landings difficult and unsafe; inadequate access and safety concerns for visitors and commercial operators crossing Sterling Highway because a new parking area would not be constructed on the south side of the highway. Bank erosion resulting in degradation of Kenai River fish habitat would continue and worsen without the construction of bank stabilization.

Alternative B—Refine Existing Conditions and Provide Off-Site Parking

Alternative B would improve existing safety conditions by completing minor improvements to Jims' Landing that result in the least impacts to vegetation, wetlands, riparian habitat and floodplains. This option, however, does not improve on-site parking capacity, traffic circulation or congested conditions at the ramp. This alternative includes 1) additional off-site parking capacity to manage increased recreation use; 2) reconstructs the boat ramp area for safer boat launch and landing conditions; and 3) parking spaces and the restroom would be modified to ADA-requirements. The project footprint of Alternative B and Off-site Parking Option 1 would increase from 1.2 acres to approximately 3 acres. Alternative B is fully disclosed in the Final Environmental Assessment.

This alternative was not selected, because Alternative B would not meet the purpose and need of the project. Existing conditions would remain and likely deteriorate as recreational use of Jims' Landing continues to exceed its capacity. Recreation experience would also continue to diminish due to the congestion at the boat ramp and lack of safer boat usage of the landing. In addition, there would be no improvements related to congestion at the boat ramp and in the parking area and lack of parking capacity for the public would remain. There would be no installation of bank stabilization to reduce high river velocities at the boat ramp and reduce bank erosion. Bank erosion and loss of Kenai River fish habitat and threat to the facility would continue and worsen without the addition of bank stabilization to control erosion.

Potential impacts associated with Alternative A, the No Action Alternative, and Alternative B, the Refined Changes to the Existing Site, were fully disclosed and analyzed in the Final EA.

Off-site Parking Option 2

Off-site Parking Option 2, approximately 1.5 acres, would have been located on the north side of Skilak Lake Road, approximately 0.25 miles west of the Jims' Landing entrance. This parking option would provide one-way traffic circulation with a designated entrance and exit, both measuring 18 feet wide. The parking area would consist of 25 angled trailer stalls measuring 12 feet by 45 feet. An elevated pedestrian walkway would be constructed on the south side of Skilak Lake Road connecting to Jims' Landing. The walkway would measure approximately 1,000 feet by 10 feet and would cross wetlands and Jean Creek.

This parking option was not selected because it does not minimize impacts to wetlands, habitat, and wildlife (e.g., brown bears) that use the Jean Creek area. In addition, this off-site parking option was not supported by public comments.

Summary of Effects of the Selected Alternative

An Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) to provide decision-making framework that 1) explored a reasonable range of alternatives to meet project objectives, 2) evaluated potential issues and impacts to the refuge, resources and values, and 3) identified mitigation measures to lessen the degree or extent of these impacts. The final EA evaluated the effects associated with the proposed action, which are incorporated as part of this finding.

Implementation of the agency's decision would be expected to result in the following environmental, social, and economic effects as described in the EA and summarized below.

Construction and operation of the proposed action will result in minor to negligible effects to air quality and noise quality, geology and soils, water quality, water resources, hydraulics, wilderness, visitor use and experience, visual resources, public access, cultural resources, administration, socioeconomics and environmental justice.

The proposed action would result in negative disturbance impacts to wildlife, special status species, wetlands, vegetation, trees and habitat, floodplains and recreation. The majority of these impacts are due to the loss of habitat and disturbance to wildlife and recreation due to the expanded footprint and temporary construction activities. However, with the implementation of best management practices, avoidance, minimization, and mitigation measures and permit requirements, these impacts would be minor. Measures to mitigate and/or minimize adverse effects have been incorporated into the Selected Alternative. Please refer to Section 4.2 Mitigation Measures and Conditions, page 53 of the Final EA, for a complete list of commitments and measures.

Wildlife and Fish

There would be an increase in disturbance impacts to wildlife from human activities, and additional potential conflicts between recreation users and wildlife due to the expansion of Jims' Landing. Increased human activity could result in changes in wildlife activity patterns in areas converted from habitat to recreation use, however, these impacts will be minor as the increase in

the facility's footprint is small and the existing facility has received high use for decades. Changes may result in additional energy consumption by individuals and increase predation resulting in mortality of wildlife. It is likely there would continue to be some conflicts between large mammals and humans within the project area; however, visitor education, project design, and best management practices would minimize these conflicts.

Disruptions and responses from instantaneous noises could reach up to approximately 0.25 mile around Jims' Landing. These include startle responses from instantaneous noises, loss of habitat, and human presence in new areas; an increase in expenditures of energy that would be detrimental to individuals during sensitive periods (e.g., nest abandonment during avian nesting season, breeding failures, and juvenile mortality). Additional impacts would include avoidance of habitat used by animals during construction and peak visitor periods.

Implementing BMPs and avoidance and minimization measures during construction would reduce impacts. These include completing clearing and grubbing of vegetation outside of the bird nesting period (generally May 1 - July 15 but dependent on species) and conducting nesting bird surveys prior to construction activities (e.g., clearing and grading) within 500 feet of the project footprint, establishing breeding bird nest buffers, and nest monitoring for active nests until nesting is complete and birds have left the nest.

Expansion of the Jims' Landing footprint would result in a loss of up to 3 acres of habitat used by wildlife and introduce new human disturbance to areas used by wildlife for foraging, breeding and cover. The loss of habitat is less than 0.007 percent of the remaining habitat available for wildlife in the Skilak WRA; therefore, these impacts while negative would be minor. By choosing Offsite Parking Option 1, impacts to wildlife, and particularly brown bears, using the Jean Creek riparian corridor are avoided.

The new boat ramp would disturb anadromous and native fish of the Kenai River due to temporary turbidity, sedimentation, and underwater noise. Installation of BMPs and adherence to federal and state regulations, measures and commitments, and permit requirements would reduce these effects.

Installation of the viewing platform would reduce the habitat and disturb movement along the riverbank used by mammals; however, this impact would be negligible. The use of light penetrating materials for the viewing platform would reduce impacts to bank vegetation and avoid any shading effects to fish habitat. In addition, the installation of root wads for bank stabilization would provide habitat for fish species and their prey which would be a beneficial impact for fish.

Migratory Bird Treaty Act

There are migratory birds present in the project area. There would be negative disturbance impacts to nesting migratory birds during construction of Jims' Landing Improvements project if construction activities occur during nesting period. However, implementation of the USFWS Land Clearing Timing Guidance for Alaska would minimize impacts to migratory birds.

Bald Eagles

The proposed action is within 660 feet of a bald eagle nest. Loss of habitat, such as removal of 89 trees greater than 12 inches diameter at breast height (DBH), changes the landscape, potentially disturbing bald eagles. Disturbance impacts from increased human activity and changes or loss of habitat from the expansion of developed areas and the loss of large trees could result in nest abandonment and/or mortality of young during nesting season.

To avoid disturbance impacts to bald eagle and their nests, the Service will implement National Bald Eagle Management Guidelines (USFWS 2007a) including conducting bald eagle nest surveys within ½ mile of construction and monitoring of active bald eagle nests, prior to and during construction as applicable. These would include distance, timing and landscape buffers.

Given the historic human use of Jims' Landing and the dynamic landscape (e.g., changes due to fire and flood events), it is likely that bald eagles nesting in the area are acclimated to the human and natural disturbances at Jims' Landing. In addition, the implementation of the National Bald Eagle Management Guidelines including nest surveys would reduce the potential for impacts.

Vegetation and Habitat

Under the proposed action, vegetation clearing, grubbing, removal of trees, and grading would result in the loss of approximately 3 acres of vegetation, which represents less than 0.007% of habitats in the Skilak WRA (which totals 44,000 acres). Approximately 91 trees greater than 12-inches DBH would be removed permanently under the selected alternative. Removal of trees permanently remove wildlife habitat but this impact would be minor due to the abundant forested area surrounding the project footprint. Construction equipment and personnel have the potential to introduce or disperse non-native plant and weed species. Best management practices to prevent introduction of invasive species during construction and continued monitoring and management of invasive species by USFWS will reduce these impacts.

Wetlands

Under the proposed action, there would be loss of up to 0.3 acres of wetlands. Impacts below OHW would be 0.07 acres resulting from the boat ramp improvements and root wad installation. Other impacts include fill and excavation associated with road and parking improvements, and the trail development between off-site parking and Jims' Landing. Increased footprint would contribute to runoff of pollutants to wetlands the Kenai River. Introduction and dispersal of nonnative species to wetlands and vegetation communities adjacent to the new infrastructure would occur.

The temporary access road and pedestrian walkway would bisect wetland habitat, potentially resulting in wetland function disruptions and degradation of habitat. The installation of a geotextile to separate temporary access road gravel from the native wetland soils and installation of a culvert or mats during construction would maintain hydrology during construction, protect wetland soils, and support re-establishment of native species. The pedestrian walkway would be constructed of light-penetrating material and would be elevated to maintain hydrologic connection and avoid shading of wetland habitat. With the implementation of best management

practices and compliance with all permit requirements and conservation measures, impacts to wetlands would be minimized.

Installation of root wads on the Kenai River bank would result in similar impacts as the construction of the boat ramp. With the implementation of best management practices and compliance with all permit mitigation measures, these impacts would be minimized. There will be long-term beneficial impacts of root wad installation (e.g., stabilize bank, reduce bank erosion and provide habitat for fish).

Floodplain

Under the proposed action, there would be disturbance impacts to floodplains from expanding the footprint of Jims' Landing. Under this alternative, Jims' Landing would occupy approximately 4 acres of floodplain. Under the Selected Alternative, the Service meets the purpose and need and complies with EO 11988 and its implementing guidance in the management of floodplains. An overflow area at the southeast corner of the access road will maintain hydrologic connectivity between the Kenai River and the adjacent wetland. This was designed to provide controlled overflow during minor flood events and reduce gravel deposition into wetlands during these events. Throughout the design process, impacts to floodplains would continue to be minimized to the maximum extent practicable.

Recreation

The Selected Alternative meets the purpose and need of the project by improving visitor safety and accommodating existing visitor capacity by constructing new roads and parking areas. Beneficial impacts would include alleviating maintenance costs and reducing dispersed use of the area. Signage to alert boaters of the upcoming boat ramp would improve safety conditions for boaters. There would be negative impacts to recreation if construction occurs during high use periods and if closures are necessary during construction; however, these impacts would be temporary. Measures to minimize impacts would include public notification, signage and use of other Refuge media such as the Facebook page and Refuge website. Overall, the Selected Alternative will increase recreation experience and meet the project's purpose and need.

National wildlife refuges, by their nature, are unique areas protected for conservation of fish, wildlife and habitat. The proposed action will not have a significant impact on Refuge resources and uses for several reasons:

- The action will result in beneficial impacts to the human environment, primarily by enhancing wildlife-dependent recreational opportunities and public safety for users of Upper Kenai River, with negligible and insignificant adverse impacts to the human environment, as discussed above.
- Any adverse direct and indirect effects of the proposed action on air, water, soil, habitats, fish and wildlife, aesthetic/visual resources, and wilderness values and nearby sensitive areas are expected to be minor, most will be short-term, and such impacts will be avoided and/or minimized by strategically locating and sizing improvements and through use of best management practices during project construction.
- The action will not negatively impact subsistence uses or users;

- The action, along with proposed mitigation measures, will ensure that there is low danger to the health and safety of visitors and refuge staff.
- The action will not impact any threatened or endangered species; or any Federally-designated critical habitat;
- The action will not adversely affect cultural or historical resources;
- The action will not impact any wilderness areas;
- There is no scientific controversy over the impacts of this action and the impacts of the proposed action are relatively certain.
- The action is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988 because:" there is minimal disturbance and permit requirements and BMPs would be implemented pursuant to Army Corps of Engineers Clean Water Act and other required permits.

Public Review

The proposal has been thoroughly coordinated with all interested and/or affected parties. Parties contacted include:

Alaska Department of Environmental Conservation
Alaska Department of Fish & Game
Alaska Department of Natural Resources. Division of Parks and Outdoor Recreation
Alaska Department of Transportation & Public Facilities,
Environmental Protection Agency
Federal Highway Administration
Kenai Peninsula Borough
Alaska State Historic Preservation Office/Office of History and Archaeology
United States Army Corps of Engineers

Agency Coordination

The USFWS partnered with the ADF&G Division of Sport Fish for the proposed action. In addition, the Alaska DNR Parks and Outdoor Recreation was included in ongoing coordination with the USFWS and ADF&G throughout the alternative development process. State agencies were contacted by the USFWS prior to the formal NEPA scoping for the Jims' Landing Project (Appendix 5) in December 2020.The USFWS and ADF&G met on-site on September 24, 2020. Design and development meetings were held on October 16, 2020 (USFWS and ADF&G), January 11, 2021 (USFWS, ADF&G, ADNR), and April 1, 2021 (USFWS, ADF&G, ADNR). A meeting to discuss hydraulic technical information and the boat ramp was held on February 25, 2021 (USFWS, ADF&G, ADNR). After the close of the public comment period, the USFWS, ADF&G, and ADNR met on July 1, 2021 to discuss comments, alternatives, and modifications to the preferred alternative. The USFWS and the USACE met on July 7, 2021 to discuss the preferred alternative, wetland delineation, and the 404 permit. A pre-application meeting to discuss the KPB Habitat, ADNR Parks, and ADF&G Title 16 Fish Habitat permits was held on July 12, 2021 and included the USFWS, ADF&G, ADNR, and KPB. Comments and design decisions discussed during these meetings included refinement of the preferred alternative to better accommodate users, improve safety, and other site design components (such as surfacing).

USFWS involved ADF&G and ADNR throughout the process, collected input, and ultimately chose a path forward considering the other agencies' input along the way.

The USFWS initiated National Historic Preservation Act Section 106 review with the Alaska SHPO on March 23 and March 25, 2021. On March 31, 2021, SHPO issued its concurrence with the finding of No Historic Properties Adversely Affected.

AK DNR ANILCA Program provided comments during the scoping and public review and comment period. KPB and Cooper Landing Advisory Planning Board also provided comments during the public review and comment period.

Tribal Consultation

The USFWS invited Tribal leaders and Alaska Native Claims Settlement Act (ANCSA) Corporations to participate in formal or informal consultation for this project throughout the planning processes, and to comment on or participate in the pre-NEPA scoping and the draft environmental assessment.

Public Involvement

On May 5, 2021, the Service issued a Notice of Availability on the Refuge's website, the Project's website (https://usfws-jims.blogspot.com/) and through news media, initiating a 45-day public comment period (ending on June 19, 2021). Comments or requests for additional information could be submitted through email, fax, or the mail. As part of the public review process, a virtual public meeting was held on May 19th, 2021 to review the EA, record comments, and answer questions. The meeting was attended by approximately five individuals, excluding Service staff and consultant team.

A total of 18 individuals/local agencies provided comments during the public comment period. Five individuals commented and asked questions during the public meeting. A total of 13 comments were received via email, including a comment letter from ANILCA, Kenai Peninsula Borough Planning Commission (KPBC), and Cooper Landing Advisory Planning Commission (CLAPC). Many comments were general in nature.

Comments fall into four general categories: biological resources, design, economic, and management. For more information regarding substantive comments and Service responses, please refer to Appendix 7 of the Final EA.

Finding of No Significant Impact

Based upon a review and evaluation of the information contained in the EA as well as other documents and actions of record affiliated with this proposal, the Service has determined that the proposal to implement *Jims' Landing Access Improvements Project* on the Kenai NWR does not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of section 102 (2) (c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required.

Decision

The Service has decided to implement Alternative C Expand and Improve Boat Ramp and Parking, and Provide Off-site Parking Option 1. Construction is tentatively planned to begin fall of 2022.

This action supports one of Kenai National Wildlife Refuge's purposes, i.e., to provide opportunities for wildlife-oriented recreation, in a manner consistent with its other establishment purposes. The action is consistent with applicable laws and policies.

BRIAN GLASPELL Digitally signed by BRIAN GLASPELL
Date: 2021.09.28 13:00:48 -08'00'

Chief, National Wildlife Refuge System
Alaska Region

Date

Supporting Documentation

Final Environmental Assessment, Jims' Landing Access ImprovementsProject, Kenai National Wildlife Refuge

ANILCA Section 810 Evaluation, Jims' Landing Access Improvements, Kenai National Wildlife Refuge

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September 2021

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Kenai National Wildlife Refuge

FINAL ENVIRONMENTAL ASSESSMENT

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List of Abbreviations and Acronyms

articulated concrete block	ACB
Alaska Department of Environmental Conservation	ADEC
Alaska Department of Fish & Game	ADF&G
Alaska Department of Natural Resources	ADNR
Alaska Department of Transportation and Public Facilities	ADOT&PF
Alaska Heritage Resources Survey	AHRS
Alaska National Interest Lands Conservation Act	ANILCA
Alaska Native Claims Settlement Act	ANCSA
Americans with Disabilities Act	ADA
Anadromous Waters Catalog	AWC
Area of Potential Effects	APE
Bald and Gold Eagle Protection Act	BGEPA
best management practices	BMP
Clean Water Act	CWA
Code of Federal Regulations	CFW
coronavirus disease	COVID
Council on Environmental Quality	CEQ
cubic feet per second	cfs
decibels	dB
diameter at breast height	DBH
Did Not Operate	DNO
environmental assessment	EA
environmental impact statement	EIS
Environmental Protection Agency	EPA
Essential Fish Habitat	EFH
Executive Order	EO
Federal Highway Administration	FHWA
feet per second	fps
Finding of No Significant Impact	FONSI
Kenai National Wildlife Refuge	Refuge or KNWR
Kenai Peninsula Borough	KPB
Migratory Bird Treaty Act	MBTA
mile post	MP
miles per hour	MPH
Memorandum of Understanding	MOU
National Environmental Policy Act	NEPA
National Marine Fisheries Service	NMFS
National Register of Historic Places	Register
National Wildlife Refuge System	NWRS
National Wildlife Refuge System Administration Act	NWRSAA
Office of History and Archaeology	OHA
ordinary high water	OHW
PND Engineers, Inc.	PND
State Historic Preservation Office	SHPO

Tribal Historic Preservation Officers	THPO
Upper Kenai River Incidental	UKRI
Upper Kenai River Float	UKRF
U.S Army Corps of Engineers	USACE
U.S. Department of Agriculture-Forest Service	USDA-FS
U.S Fish and Wildlife Service	Service or USFWS
United States Code	USC
United States Geological Survey	USGS
Visitor Use Day	VUD
Skilak Wildlife Recreation Area	WRA
Threatened & Endangered	T&E

1 Introduction

This Final Environmental Assessment (EA) was prepared to evaluate the effects associated with this proposed action and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 CFR 1500-1508) and Department of the Interior (43 CFR 46; 516 DM 8) and U.S. Fish and Wildlife Service (550 FW 3) regulations and policies. NEPA requires examination of the effects of proposed actions on the natural and human environment.

1.1 Proposed Action

The US Fish and Wildlife Service (Service or USFWS) is proposing to improve the Jims' Landing[1] Boat Launch access and parking situated along the Kenai River in the Kenai National Wildlife Refuge (Refuge). The proposed action includes the following:

- Improve boat ramp conditions for users.
- Improve pedestrian and vehicle safety.
- Provide additional parking capacity for vehicles with and without trailers.
- Provide an off-site parking area on the south side of Sterling Highway.
- Minimize impacts to the Kenai River and the Kenai River wetlands and riparian habitat.

The proposed action is in accordance with the following goals of the Refuge's Comprehensive Conservation Plan (USFWS 2010):

- Goal 3: Resource Assessment—Ensure that the integrity of ecological systems is protected and unimpaired for future Generations
- Goal 4: International Treaties—Ensure that Refuge management practices affecting avian species contribute to the successful implementation of the Migratory Bird Treaty Act (MBTA)
- Goal 5: Water Resources—Ensure natural function and condition of water resources necessary to conserve fish and wildlife populations and habitats in their natural diversity.
- Goal 7: Wildlife-Oriented Recreation—Visitors of all skills and abilities will enjoy wildlife-oriented recreation opportunities in safe and secure settings.
- Goal 8: Facilities—Visitors and refuge personnel will value and enjoy safe, well-maintained facilities and quality programs.
- Goal 9: Wilderness Stewardship—Preserve and, where necessary, restore the character and integrity of Wilderness for present and future generations.

[1] USFWS is renaming this facility from Jim's Landing to Jims' Landing. Usage of the new name for this environmental assessment is at the direction of the USFWS.

The project area, encompassing approximately 18 acres, is on the upper Kenai River within the Refuge, at Sterling Highway mile post (MP) 58, Skilak Lake Road (Figure 1-1).

A proposed action is often iterative and may evolve during the NEPA process as the agency refines its proposal and gathers feedback from the public, tribes, and other agencies. Therefore, the final proposed action may be different from the original. The proposed action was finalized at the conclusion of the public comment period for the EA.

1.2 Background

National Wildlife Refuges are guided by the mission and goals of the National Wildlife Refuge System (NWRS), the purposes of an individual refuge, Service policy, and laws and international treaties. Relevant guidance includes the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd-668ee), Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k-4), and selected portions of the Code of Federal Regulations and Fish and Wildlife Service Manual.

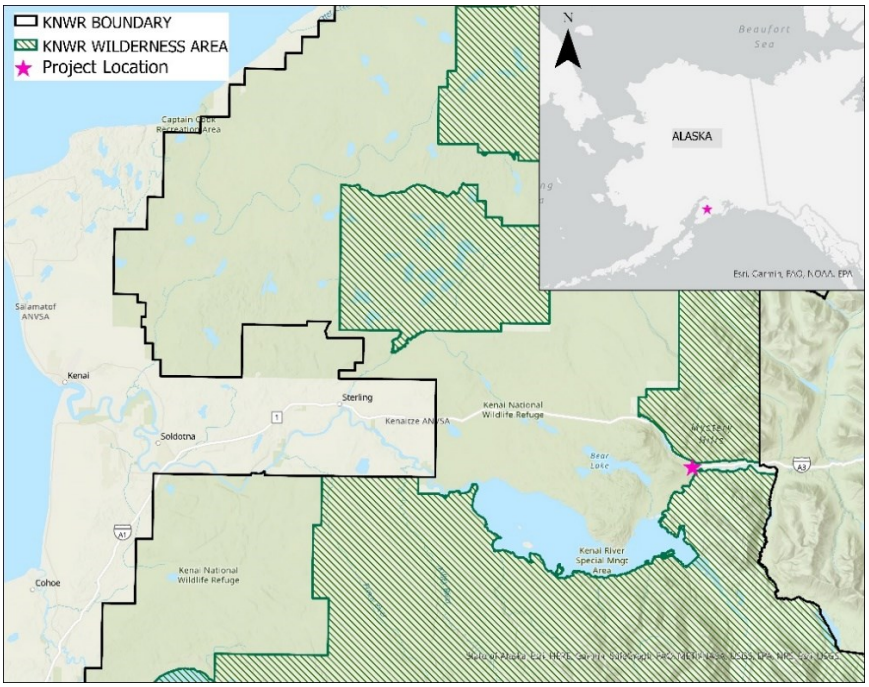

Figure 1-1 Project Location Overview

Franklin D. Roosevelt established the Kenai National Moose Range (Moose Range) on December 16, 1941, for the purpose of "…protecting the natural breeding and feeding range of the giant Kenai moose on the Kenai Peninsula, Alaska, which in this area presents a unique wildlife feature and an unusual opportunity for the study, in its natural environment, of the practical management of a big-game species that has considerable local economic value…" (Executive Order 8979).

The Alaska National Interest Lands Conservation Act (ANILCA) substantially affected the Moose Range by modifying its boundaries and broadening its purposes to include conservation of a broad array of fish, wildlife, and habitats in their natural diversity,

meeting international treaty obligations, protection of water quality and quantity, and providing opportunities for scientific research, land management training, and educational and recreational activities. ANILCA also redesignated the Moose Range as the Kenai National Wildlife Refuge (Refuge), added nearly a quarter of a million acres of land, and established the 1.32 million-acre (534,349 hectare) Kenai Wilderness.

Refuge Purposes

ANILCA sets out purposes for each refuge in Alaska. The ANILCA purposes of the Refuge are described in Section 303(4)(B) of the Act. The purposes identify some of the reasons why Congress established the Refuge and set the management priorities for it.

ANILCA purposes for the Refuge are as follows:

> *(i) to conserve fish and wildlife populations and habitats in their natural diversity, including but not limited to moose, bears, mountain goats, Dall sheep, wolves and other furbearers, salmonoids and other fish, waterfowl and other migratory and nonmigratory birds;*
>
> *(ii) to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;*
>
> *(iii) to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge;*
>
> *(iv) to provide in a manner consistent with subparagraphs (i) and (ii), opportunities for scientific research, interpretation, environmental education, and land management training; and*
>
> *(v) to provide, in a manner compatible with these purposes, opportunities for fish and wildlife-oriented recreation.*

Policy (FWS 603 2.8) directs that pre-ANILCA purposes remain in force and effect, except to the extent that they may be inconsistent with ANILCA or the Alaska Native Claims Settlement Act, and that such purposes only apply to those areas of the Refuge in existence prior to ANILCA. The Executive Order purpose to protect Kenai moose, however, is treated as complementary to the broader ANILCA purpose of conserving fish and wildlife populations; therefore, no special attention is given to the Executive Order purpose in this compatibility review process.

ANILCA also designated 1.32 million acres (of the now 1.98 million acres Refuge) as the Kenai Wilderness, to be managed as part of the National Wilderness Preservation System.

The Wilderness Act of 1964 (Public Law 88-577) created additional purposes for the Kenai National Wildlife Refuge. Section 4.(3)(b) of the Wilderness Act provides, "Except as otherwise provided in this chapter, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise noted in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."

The mission of the NWRS, as outlined by the National Wildlife Refuge System Administration Act (NWRSAA), as amended by the National Wildlife Refuge System Improvement Act (16 United States Code (U.S.C.). 668dd et seq.), is to:

> *"... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans"*

A list of applicable statutes, executive orders and regulations is presented in Appendix 1.

1.3 Purpose and Need for the Proposed Action:

The NWRSAA mandates the Secretary of the Interior in administering the National Wildlife Refuge System to (16 U.S.C. 668dd(a)(4)):

- *Provide for the conservation of fish, wildlife, and plants, and their habitats within the NWRS;*
- *Ensure that the biological integrity, diversity, and environmental health of the NWRS are maintained for the benefit of present and future generations of Americans;*
- *Recognize compatible wildlife-dependent recreational uses as the priority general public uses of the NWRS through which the American public can develop an appreciation for fish and wildlife, and*
- *Ensure that opportunities are provided within the NWRS for compatible wildlife-dependent recreational uses.*

The Service proposes improvements to the Jims' Landing facility, consisting of transportation access, parking areas, and boat ramp improvements. The Jims' Landing boat ramp and parking facility is within the Skilak Wildlife Recreation Area (WRA), which is a component of the Refuge. This recreational site offers important recreational opportunities (e.g., boat ramp for boat launch and retrieval on the upper Kenai River) between the Russian River and Skilak Lake.

The purpose of this proposed action is to address recreation needs, public safety, and access requirements of Jims' Landing day use facility by improving the boat launch and retrieval area, and facilitating traffic and pedestrian flow with improved roads, parking areas, and signage.

The need of the proposed action is to meet the Service's priorities and mandates as outlined by the NWRSAA to "recognize compatible wildlife-dependent recreational uses as the priority general public uses of the NWRS through which the American public can develop an appreciation for fish and wildlife" (16 U.S.C. 668dd(a)(4)), and the Refuge's Comprehensive Conservation Plan (USFWS 2010) goals 3, 4, 5, 7, 8 and 9 as stated above.

1.3.1 Support for Purpose and Need

Purpose

The purpose of the proposed action is to address public safety and pedestrian and vehicle access needs of Jims' Landing recreational boating activities by improving the boat ramp launch and retrieval area, realigning and improving roads and trails to improve vehicle and pedestrian circulation, expanding parking areas, and adding new signage.

The project includes facility and ramp improvements and additional parking onsite, as well as off-site along Skilak Lake Road.

In addition to improving public access and safety, protecting the wetland and riparian habitats is integral to the purpose and need of the proposed action.

Need

Jims' Landing is a high use boat ramp that offers access to the Kenai River between the Russian River and Skilak Lake. Annual visitation is estimated at approximately 42,000 visitors (USFWS personal communication). The boat ramp is used primarily as a landing, or take-out, for drift boats and inflatables (such as rafts), providing the last take-out prior to the Kenai River canyon above Skilak Lake. Novice boaters, and those unfamiliar with the landing, are often caught off guard by the ramp's location and the high river velocities. This reach of the Kenai River has some of the highest flow velocities. The ramp's location on an outer bend of the Kenai River, coupled with the high river flow velocity, lends itself to scour and bank erosion. The proposed action would improve the boat ramp function by addressing the public need for access and safety while maintaining the habitat function of the area.

In addition to the improvements to the boat ramp, the project proposes to increase parking capacity for public and commercial operators. The parking areas at Jims' Landing are used mostly by public day use visitors and are generally at maximum capacity and chaotic during the fishing season (June through October). Other users of the parking area include overnight campers and hunters. Due to the limited public parking capacity, all commercial operators are required to use the overflow parking on the north side of the Sterling Highway. This creates a safety hazard for operators and highway vehicles because the commercial operators must walk across the highway to Skilak Lake Road. Off-site parking options were evaluated to reduce the need for commercial operators to park on the north side of Sterling Highway. Additionally, the risk of accidents will increase when this section of highway is improved by Alaska Department of Transportation & Public Facilities (ADOT&PF) Sterling Highway MP 45 to 60 Project and because the vehicle speed is anticipated to increase.

The Kenai River provides a priceless spawning and rearing habitat for millions of salmon. Accordingly, in addition to improving public access and safety, protecting the wetland and riparian habitats is integral to the purpose and need of the proposed action.

1.4 Project Area

The project area, encompassing approximately 18 acres, is located on the upper Kenai River of the Kenai National Wildlife Refuge, Sterling Highway MP 58, Skilak Lake Road (Figure 1-2). The proposed action is located in Section 35, Town 05, North Range 05 West, Seward Meridian, Alaska near Cooper Landing, Alaska.

The Kenai River, the largest drainage system on the Kenai Peninsula, is important to the Refuge ecosystem. Visitors from around the world visit the Kenai River each year to fish for salmon, trout, and Dolly Varden. The proposed action will focus on public use improvements (e.g., roads, boat ramp, safety, parking and traffic flow) and limiting the environmental impact to the surrounding wetlands, riparian habitat and floodplains.

This recreation site offers access to the Kenai River between the Russian River and Skilak Lake. Wetland and riparian habitats, an anadromous stream (Jean Creek) and a bald eagle nest tree are among the natural resources found here. The river is characterized as a very strong main channel with high flow velocity, rimmed by backwaters that rise and fall with river water levels. A mature forest dominated by black cottonwoods and white spruce lines the banks.

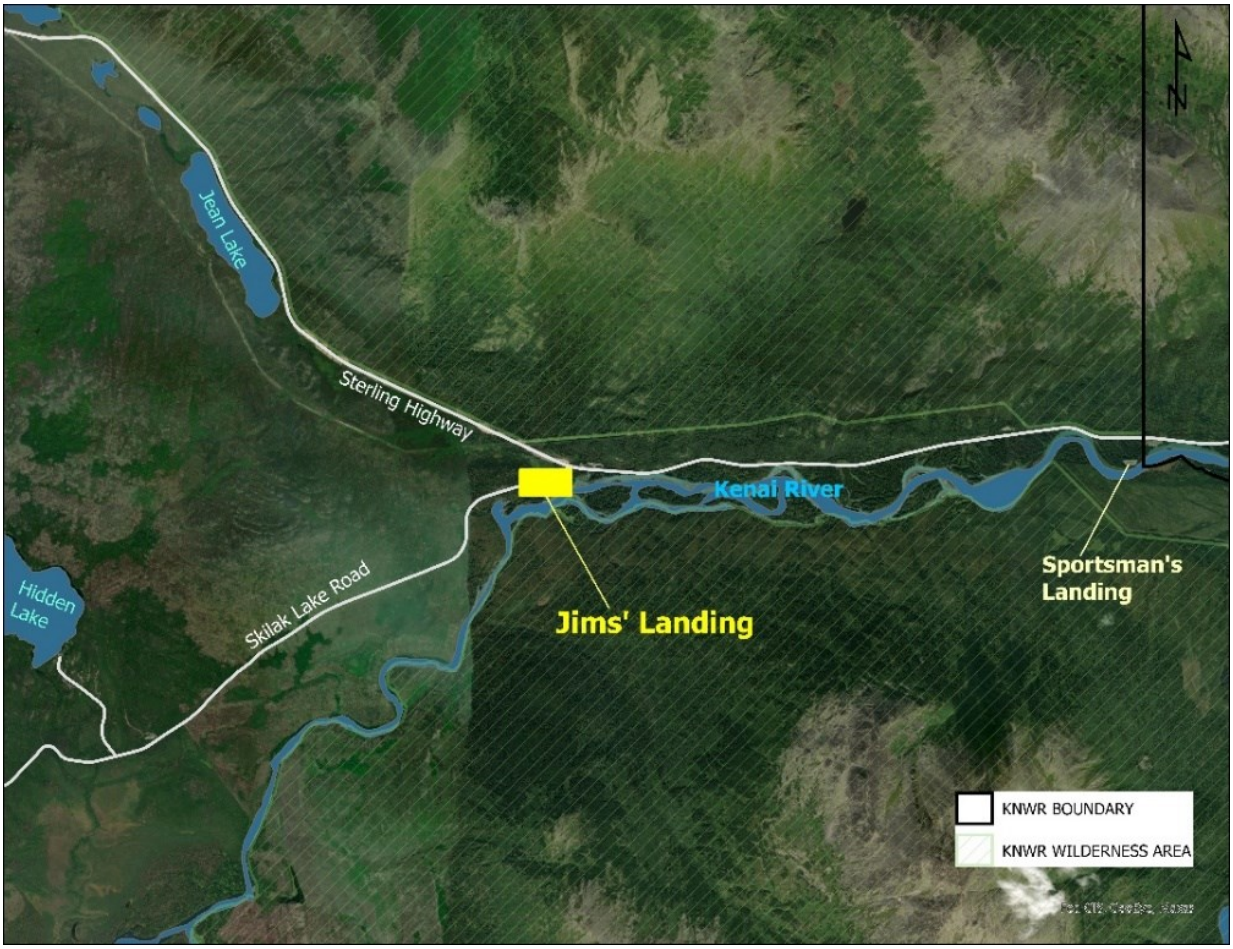

Figure 1-2 Overview of the Project Vicinity

1.5 Scoping and Public Involvement

The scoping process is an early, open, and continuous process during the preparation of the EA for the purpose of determining the range of issues that will be addressed in the EA and for identifying the significant issues related to the proposed action (43 CFR § 46.235). During 2020 and 2021, the Refuge engaged in pre-NEPA outreach to agencies, tribes, and the public to assist in the development of project alternatives. A virtual pre-NEPA meeting was held on December 8, 2020. Please refer to Section 5 for more information. On May 5, 2021, the Service issued a Notice of Availability initiating a 45-day public comment period of the EA that ended on June 19, 2021. Several changes were made to the EA to address public comments and incorporate new information. These changes are summarized in Table 1 of Appendix 7.

Scoping and public notification must be provided and, where appropriate, the public involved in the EA process. In Alaska, the ANILCA requires "a public hearing" for any proposed land management plan, plan revision, or any action that could affect subsistence.

2 Alternatives Considered

Three project alternatives were considered and based on addressing the purpose and need of the Proposed Action in accordance with NEPA (40 CFR 1502.14). The Selected Alternative is Alternative C and Off-site Parking Option 1 (hereafter referred to as the Selected Alternative).

This chapter provides a description of each alternative: Selected Alternative (Alternative C), Expand and Improve Boat Ramp and Parking with Off-site Parking Option 1; Alternative A No Action Alternative, and Alternative B Refine Existing Conditions and Provide Off-site Parking. The two off-site parking options were evaluated to determine which best meets the project purpose and need, and are described below. A comparison of the Alternatives and Off-site Parking Options is presented in Table 2-1 and Table 2-2 Comparison of Off-Site Parking Options, respectively.

The No Action Alternative discusses the existing conditions, foreseeable conditions, and effects should the project not be approved and not be implemented. It also serves as the baseline for comparing the environmental impacts of the reasonable range of Alternatives.

The Refuge prepared conceptual designs, with public and agency input, through a scoping process prior to the preparation of the environmental assessment. The scoping process included distribution of an agency scoping letter and the public meeting, as described in Section 5.

2.1 Selected Alternative (Alternative C Preferred Alternative)

Expand and Improve Boat Ramp and Parking, and Off-site Parking Option 1

The goal of the Selected Alternative is to improve public safety and recreation experience of the Jims' Landing facility by increasing parking capacity, improving traffic circulation and boat ramp safety while minimizing impacts to vegetation, wetlands, riparian habitat and floodplains. The Selected Alternative would provide one-way traffic circulation in order to reduce congestion, provide additional parking capacity and pull-off areas, and reconstruct the boat ramp area for safer boat launch and landing conditions. The project footprint of Alternative C would be approximately 3.0 acres, not including an off-site parking area option. Eighty-nine trees greater than 12 inches diameter at breast height (DBH) will be removed permanently for the Selected Alternative. With Off-site Parking Option 1, the project footprint would be approximately 4.0 acres. With Off-site Parking Option 2, the project footprint would be 4.5 acres. Figure 2-1 depicts the Selected Alternative.

Temporary Construction Access

Laydown and staging would be on previously disturbed areas or areas that will be incorporated into the project footprint. Off-site Parking Option 1 would serve as a staging area and provide a secondary construction access route to Jims' Landing. The temporary construction access route would measure approximately 25 feet wide to accommodate construction vehicles and equipment. Vegetation in temporary disturbance areas would cut back to the ground to allow for regrowth upon completion of construction to promote revegetation. Four trees, greater than 12 inches DBH, would be removed permanently and/or limbs cut to facilitate access by construction vehicles. For

temporary disturbance areas, such as the Off-site Parking Option 1 temporary access route, geotextile will be used as an underlayment to separate temporary disturbance areas (e.g., gravel fill) from native soils and vegetation. A temporary culvert or wetland mat may be installed through the wetland areas during construction. Upon completion, all temporary disturbance areas would be restored to previous condition, to the extent practicable.

Jims' Landing Entrance and Access Roads

The Selected Alternative would construct a one-way (uni-directional) access road measuring approximately 1,500 feet. Drive aisles entering Jims' Landing will have parking access and will measure 20 feet wide. Drive aisles exiting Jims' Landing will have no parking access and will measure 16 feet wide. At the entrance, a traffic island would be constructed to separate the entry and exit of vehicles and clearly establish the one-way traffic circulation. Two pull-off areas would be constructed for staging and tie down. The pull-off nearest the boat ramp (to the west) would be designated as a staging area for boaters waiting to use the ramp. The pull-off to the east of the boat ramp would be designated as a tie-down area for securing trailers prior to exiting Jims' Landing. The staging pull-off would measure approximately 200 feet by 12 feet. The tie-down pull-off would measure approximately 310 feet by 15 feet.

Parking areas and roads will be surfaced with gravel. Two road areas will consist of hardened surfaces: the area connecting the road to the boat ramp and an overflow area at the southeast corner of the access road (Figure 2-1). The overflow area is approximately 50 feet wide and maintains hydrologic connectivity between the Kenai River and the adjacent wetland. It was designed to provide controlled overflow during minor flood events and reduce gravel deposition into wetlands during these events. The hardened surface areas may be asphalt pavement, concrete, or articulated concrete block.

Parking

On-site parking capacity would be increased to 42 angled trailer parking stalls (measuring 12 feet by 45 feet) and 16 passenger vehicle spaces (measuring 10 feet by 20 feet). At least one trailer parking stall and two passenger vehicle stalls would be improved to meet ADA-compliant requirements.

Pedestrian Walkway, Double Vault Toilet and Viewing Platform

A 5-foot-wide pedestrian walkway would be constructed along the north side of the road and connect the off-site parking walkway to the boat ramp area. The walkway would measure approximately 800 feet in length.

A new double vault restroom will be constructed approximately 130 feet northwest of its existing location and will be modified to meet ADA requirements. New pits would be excavated for the restroom and the former restroom pits would be backfilled.

An elevated viewing platform would be constructed near the upstream end of the boat ramp in the area adjacent to the root wad installation. The 30-foot by 20-foot viewing platform would be constructed with light penetrating material to avoid shading effects. The viewing platform is intended to improve wildlife viewing opportunities and reduce congestion by separating pedestrians from the boat ramp area.

Boat Ramp

The new boat ramp would measure approximately 110 feet by 50 feet. The new ramp surface would consist of articulated concrete block (ACB) mat. Prior to installing the ACB mat, the existing ramp will be regraded from a 20 percent slope to a 13 percent slope. The ramp will consist of two areas – an active ramp area and an area for landing and staging boats. The areas would be demarcated by a line of boulders at the top of the landing area to prevent trailers from blocking the landing. A 48-foot section of ramp, located on the upstream end of the ramp, would be designated as the active ramp area for loading and unloading boats. A backwater area would be created 15 feet landward of the existing ramp to provide reduced river velocity for safer loading and unloading of boats. The remaining 62 feet of the ramp, on the downstream end, would be used for landing and staging boats.

Signage alerting boaters of the Jims' Landing boat ramp approach would be mounted on an exposed rock on the river bank, approximately 800 feet upstream of the ramp.

Bank Stabilization

Under the Selected Alternative, bank stabilization will be installed along 40 feet of the bank beginning just upstream of the ramp. Bank stabilization would reduce river flow velocity at the ramp and reduce potential erosion of the bank. The bank stabilization would consist of root wad revetment, using log boles measuring approximately 8 to 10 feet long and embedded into the riverbank. Rebar and a toe log would be used to secure the bole. Installation of the root wads would require the removal of all vegetation and trees in this area, and the temporary removal of a portion of the bank for placement of the root wad. Above the root wad installation, the riverbank would be built back with soil wraps[2]. Disturbed areas would be filled with new weed-free soil and reseeded. Willow cuttings would be installed along the riverbank edge for revegetation and screening.

All road, walkway, and parking surfaces would be any combination of ACB mat and gravel, concrete, or asphalt pavement.

The existing potable water well would be decommissioned. No running water would be available at Jims' Landing. In addition to on-site parking, Off-site Parking Option 1 would be included with Alternative C. See discussion of the off-site parking options below.

[2] Soil wraps are a mixture of soil and topsoil wrapped in a biodegradable geotextile, such as burlap or coir fabric. These typically measure approximately 12 inches thick, vary in length and often used in conjunction with willow cuttings and other bioengineering techniques for bank revegetation and stabilization.

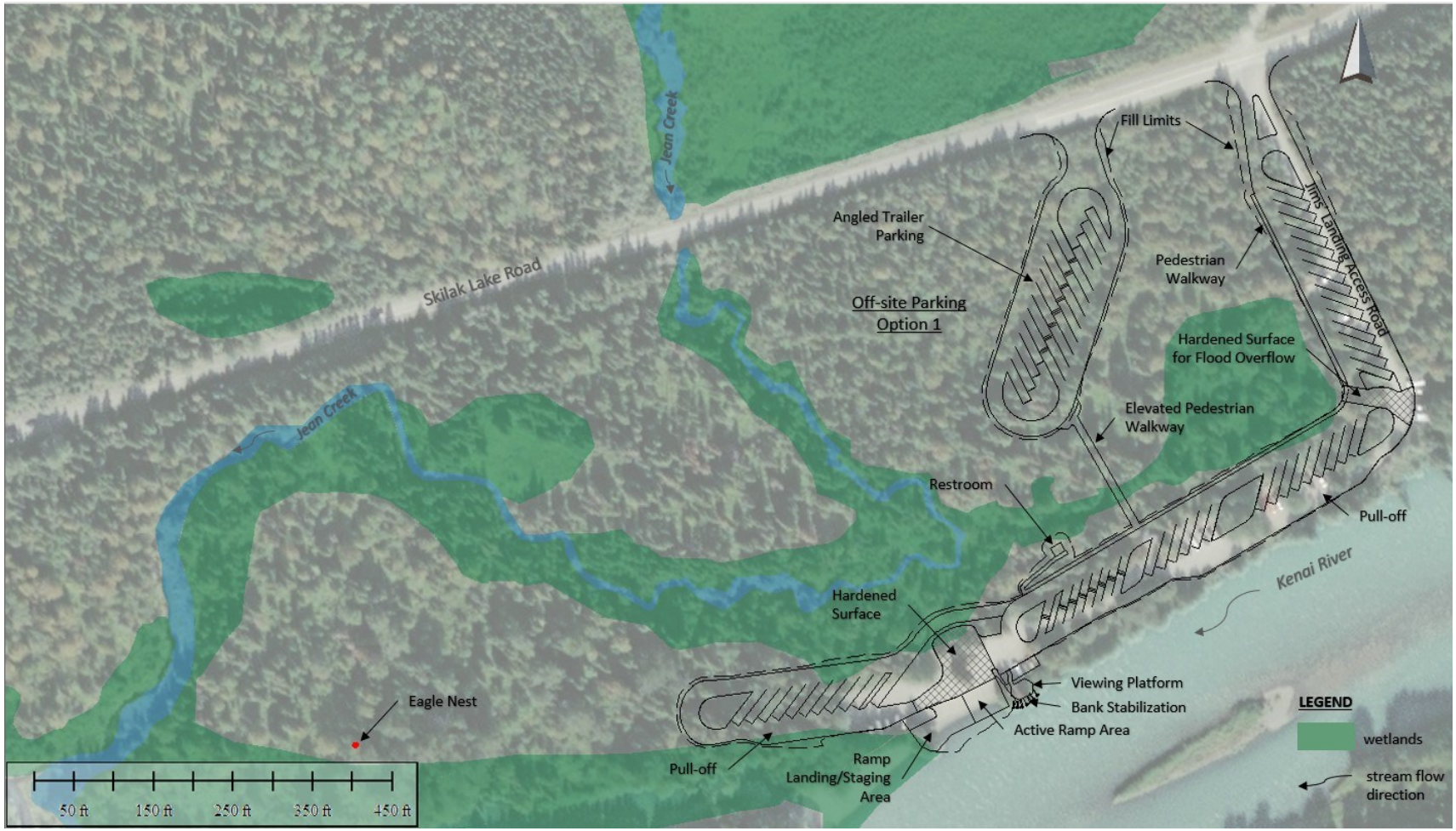

Figure 2-1 Selected Alternative shown with selected Off-site Parking Option 1.

An eagle nest observed in 2020 is also shown for reference.

2.1.1 Off-site Parking Option 1 Skilak Lake Road South Selected Parking Option

Off-site Parking Option 1 is on the south side of Skilak Lake Road, adjacent to Jims' Landing (Figure 2-1). Surfacing for the parking area would be any combination of ACB mat, gravel, or asphalt pavement. This off-site parking footprint is approximately 1.0 acre and measures approximately 400 feet by 110 feet.

This option provides one-way traffic circulation through the parking area with aisles measuring 20 feet wide, and 24 angled trailer stalls measuring 12 feet by 45 feet. Eighteen trees, greater than 12 inches DBH, would be removed permanently. An elevated pedestrian walkway measuring 150 feet by 10 feet would be constructed between the parking area and Jims' Landing to maintain hydrologic connectivity. Prior to construction of the elevated pedestrian walkway, the area would be used by construction vehicles to access Jims' Landing during the project. Pedestrian walkways would be elevated and constructed of light penetrating materials in wetland areas. Refer to temporary construction access and staging in the Alternative B and C descriptions.

2.2 Alternative A No Action

The No Action Alternative would continue the Refuge's current management of Jims' Landing.

Currently, the footprint of the existing Jims' Landing facility is approximately 1.2 acres and consists of the following:

- Gravel entrance road measuring 20 feet wide by approximately 1,300 feet
- Two pull-off areas for vehicles and trailers
    - A pull-off along the access road to the southeast measuring 60 feet by 25 feet
    - A pull-off along the river near the boat ramp measuring 90 feet by 12 feet
- Thirty trailer parking spaces measuring approximately 12 feet by 35 feet
- Twenty-one standard passenger vehicle spaces
- One double vault restroom facility
- A boat ramp measuring approximately 100 feet by 40 feet with a 20 percent grade
- A potable water well with a hand pump located adjacent to the boat ramp

All road and ramp surfaces consist of gravel. Parking stalls are not delineated (lined) but do have wheel stops for trailers. A wooden fence runs the length of the access road that parallels the river. There is an existing overflow parking lot for commercial guides on the north side of Sterling Highway and a short-term parking or pull-off area on Skilak Lake Road. These features are not part of the proposed project or footprint. Jims' Landing existing facility is shown in Figure 2-2.

Figure 2-2 Overview of the existing Jims' Landing facility footprint.

The location of the eagle nest identified in 2020 is included for reference.

2.3 Alternative B

Refine Existing Conditions and Provide Off-Site Parking

The goal of Alternative B is to improve existing safety conditions by completing minor improvements to Jims' Landing that result in the least impacts to vegetation, wetlands, riparian habitat and floodplains. This option does not improve on-site parking capacity, traffic circulation or congested conditions at the ramp. However, Alternative B provides an off-site parking area for commercial operators on the south side of the Sterling Highway, thereby improving safety conditions for commercial operators. Road and on-site parking surfaces would be resurfaced using similar grade gravel. Figure 2-3 presents Alternative B improvements and includes both parking options for reference.

The project footprint of this alternative would be approximately 1.4 acres before including an off-site parking option. With the addition of Off-site Parking Option 1, the project footprint would be 2.4 acres. With Off-site Parking Option 2, the project footprint would be 2.9 acres.

Temporary Impacts & Construction Access

Laydown and staging would be on previously disturbed areas or areas that will be incorporated into the project footprint. If Off-site Parking Option 1 is selected, it would serve as a staging area and a secondary construction access route to Jims' Landing. For temporary construction access, the temporary access route would measure approximately 25 feet wide to accommodate construction vehicles and equipment. Vegetation in temporary disturbance areas would cut back to the ground to allow for regrowth upon completion of construction to promote revegetation. The minimum number of trees would be removed or limbs cut to facilitate access by construction vehicles. For temporary disturbance areas, such as the Off-site Parking Option 1 temporary access route, geotextile would be used to separate temporary gravel fill from native soils and vegetation. A temporary culvert, wetland mat, or elevated platform would be installed through the wetland areas. Upon completion, all temporary disturbance areas would be restored to previous condition, to the extent practicable.

Jims' Landing Entrance and Access Roads

Alternative B proposes to widen the existing two-way access road measuring 1,300 feet by 20 feet by 4 feet to 1,300 feet by 24 feet. Under this alternative, there would be three vehicle pull-off areas. Two vehicle pull-offs[3] would be added on each side of the access road, near the boat ramp, each measuring approximately 100 feet by 11 feet. The existing pull-off at the southeast section of the access road, measuring approximately 100 feet by 14 feet, would be regraded and resurfaced.

[3] Pull-offs are intended to provide an area for vehicles to queue outside of the main traffic flow while waiting to use the ramp and to provide space for boat and equipment tie-down prior to leaving Jims' Landing.

Figure 2-3 Alternative B shown with both off-site parking options.

Note: The location of the eagle nest identified in 2020 is included for reference.

Parking and Double Vault Restroom

The existing parking area would be regraded and resurfaced, and existing parking stalls would be redefined and delineated. There would be 30 perpendicular trailer parking stalls, measuring 12 feet by 45 feet, and 21 standard passenger vehicle stalls, measuring 9 feet by 18 feet.

Up to two standard passenger vehicle parking stalls would be modified to meet ADA requirements for parking spaces.

The existing double vault restroom would remain in its present location but would undergo modifications to meet ADA requirements.

Boat Ramp

The new boat ramp would measure 90 feet by 50 feet. The new ramp surface will be ACB mat. Before installing the new ACB mat, the existing ramp will be regraded from a 20 percent slope to a 13 percent slope. A 32-foot section of the ramp, located in the center of the ramp, will be designated an active ramp area for loading and unloading boats. The remaining ramp area on either side of the active ramp would be used for boat landing and staging. This area measures approximately 18 feet on the upstream ramp and 40 feet on the downstream ramp (total of 58 feet).

Signage alerting boaters of the Jims' Landing boat ramp approach may be mounted on an exposed rock on the river bank, approximately 800 feet upstream of the ramp.

The existing potable water well would be decommissioned. No running water would be available at Jims' Landing. In addition to on-site parking, one of two off-site parking options were evaluated with Alternative B. See discussion of the off-site parking options below.

Table 2-1 Summary Comparison of Alternatives A, B and C

Description	Alternative A	Alternative B	Alternative C Selected Alternative
Footprint (total area)	1.2 acres	1.4 acres	3.0 acres
Vehicle circulation	2-way	2-way	1-way
Gravel entrance road	1,300 ft x 20 ft	1,300 ft x 24 ft	1,500 ft x 20 ft
Pull off area for vehicles and trailers	60 ft x 25 ft 90 ft x 12 ft	100 ft x 11 ft 100 ft x 11 ft 100 ft x 14 ft	200 ft x 12 ft 310 ft x 15 ft
Trailer parking spaces	30 12 ft x 35 ft	30 12 ft x 45 ft	42 12 ft x 45 ft
Standard vehicle spaces	21 9 ft x 8 ft	21 9 ft x 8 ft	16 10 ft x 20 ft
ADA parking	No	Yes	Yes

Toilet	double vault	double vault	double vault New location
ADA toilet	-	Yes	Yes
Boat Ramp	100 ft x 40 ft 20% slope Gravel fill	90 ft x 50 ft 13% slope ACB mat	100 ft x 50 ft 13% slope ACB mat
Pedestrian walkway	-	-	1,500 ft
Viewing platform	-	-	30 ft x 20 ft
Bank stabilization and flow velocity reduction	No	No	Yes

2.4 Additional Off-site Parking Option Considered

Two off-site parking options, both on Skilak Lake Road, were developed for Alternatives B and C. Skilak Lake Road, accessed from Sterling Highway at MP 58, is a secondary, state-maintained loop road that provides access through the Refuge and WRA to Skilak Lake, other smaller lakes, campgrounds, and multiple trailheads. The off-site parking options would reduce the need for commercial operators to park on the north side of Sterling Highway.

2.4.1 Option 2 Skilak Lake Road North

Off-site Parking Option 2 is on the north side of Skilak Lake Road, approximately 0.25 miles west of the Jims' Landing entrance (Figure 2-4). This footprint would be approximately 1.5 acres.

Off-site Parking Option 2 would provide one-way traffic circulation with a designated entrance and exit, both measuring 18 feet wide. The parking area would consist of 25 angled trailer stalls, measuring 12 feet by 45 feet.

An elevated pedestrian walkway would be constructed on the south side of Skilak Lake Road connecting to Jims' Landing. The walkway would measure approximately 1,000 feet by 10 feet. The walkway crosses wetlands and Jean Creek. To avoid impacts to Jean Creek, a pedestrian bridge would be constructed spanning the creek. The bridge would measure approximately 14 feet by 12 feet. Light penetrating material would be used for the construction of elevated walkway and bridge crossing Jean Creek.

Table 2-2 Comparison of Off-Site Parking Options

Description	**Off Site Parking**	
	Option 1 **Selected Parking Option**	**Option 2**
Footprint (total area)	1.0 acre	1.5 acres
Trailer stalls	24 angled 12 ft x 45 ft	25 angled 12 ft x 45 ft
Elevated Pedestrian Walkway	10 ft x 150 ft	10 ft x 1,000 ft
Pedestrian bridge	-	14 ft x 12 ft over Jean Creek

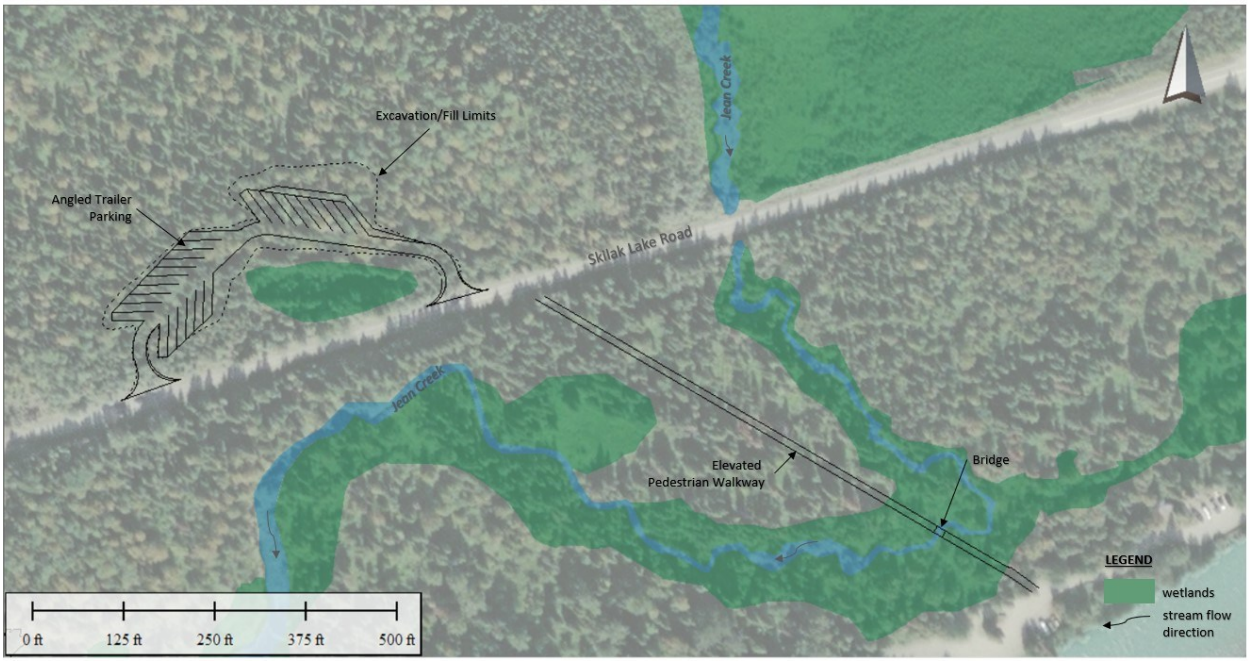

Figure 2-4 View of Off-site Parking Option 2 with elevated pedestrian walkway and bridge.

2.5 Construction Sequence and Equipment

Generally, the construction for each area would be sequenced as follows:

1. Delineate construction area and mark vegetation and trees to be protected and preserved.
2. Install erosion and sediment control best management practices (BMPs), traffic controls, and applicable permit requirements and conservation commitments.
3. Mobilize equipment and materials.
4. Clear, grade and excavate the project footprint.
5. Install culvert(s), elevated walkways or bridge. This may include minor excavation.
6. Apply asphalt, gravel surfacing or ACB mat, where applicable.
7. Install new double vault restroom, if applicable.
8. Prepare bank stabilization and install root wads.
9. Reseed and replant temporarily disturbed areas where applicable.
10. Install signage and viewing platform.
11. Demobilize equipment and materials.
12. Remove traffic control.
13. Remove erosion and sediment control devices and other BMPs.

2.6 Alternative(s) Considered, But Dismissed From Further Consideration

A fourth alternative, Alternative D, was considered and dismissed from further analysis in this EA because the impacts to wetland and riparian habitats did not meet criteria for minimizing impacts to habitats. Therefore, Alternative D did not meet the purpose and need and was not carried forward in this analysis.

3 Affected Environment

The Refuge encompasses approximately 3,094 square miles (1.98 million acres) with approximately 1.3 million acres of designated Wilderness and 44,000 acres for the WRA. The study area (18 acres) is within the WRA and represents less than 0.05 percent of the WRA and a tiny fraction of the total Refuge area.

This section describes the existing resources that could be affected by the alternatives, including physical, biological, and human environment resources, and defines the context in which the impacts could occur. The information below is based on publicly available sources including the Kenai National Wildlife Refuge Comprehensive Conservation Plan (USFWS 2010), the Skilak Recreation Area Revised Management Plan (USFWS 2007), The Design Strategy for Proposed Public Use Facilities in the Skilak Wildlife Recreation Area (USFWS 1993), Federal Highway Administration (FHWA) and ADOT&PF Sterling Highway MP 45-60 Project Final EIS, Preliminary Jurisdictional Determination Final (HDR 2010) prepared for the ADOT&PF Sterling Highway Mile Post 45 to 60 Project, and Jims' Landing and Boat Launch Improvements Vegetation and Wetland Resources Study (PND 2021b) and associated technical reports.

3.1 Air and Noise Quality

Kenai Refuge is designated a Class II air quality area under the Clean Air Act; Class II allows for some incremental increase in pollution over base-line concentrations. While air quality is generally excellent, vehicles using the Skilak Lake Road during dry periods stir up dust from the gravel road surface, which deteriorates air quality. In addition, exhaust from these vehicles degrades air quality along the road corridor, particularly during periods of high public use (USFWS 2007).

The Sterling Highway and Skilak Lake Road border Jims' Landing (Figure 1-2). A 2004 study found highway noise averaged 72 decibels (dB) on the highway during peak vehicle traffic with a maximum of 120 dB. In areas where the highway traverses through forested landscapes (soft site conditions[4]), vehicle generated noise was reduced to background levels within 328 to 656 feet (USFWS 2010). The Service concluded that noise pollution can be problematic at some sites, some of the time, for humans and wildlife (USFWS 2010).

Jims' Landing is between approximately 370 (entrance) to 1,800 feet (boat ramp) from Sterling Highway. Noise from Sterling Highway, Skilak Lake Road and recreational users of Jims' Landing contribute to the soundscape of the project area. Other contributors include wind and river flows. FHWA and ADOT&PF (2018) assume that current traffic noise conditions within wildlife habitat may average around 40 dB but are assumed to be regularly influenced by instantaneous noises.

[4] Natural factors such as topography, vegetation, and temperature can reduce in-air noise over distance. A hard site exists where noise travels away from the source over a generally flat, hard surface such as water, concrete, or hard-packed soil. When ground cover or normal unpacked earth is present between the source and receptor, the ground becomes absorptive to noise energy and is defined as a soft site (WSDOT 2020).

3.2 Geology and Soils

The geology of the Kenai lowlands is characterized by Alaska Peninsular terrane, composed of riverine deposits of gravel and sand overlain by variably drained silt loams. These vary from thin layers on steep slopes to deep layers on alluvial benches that may be either well-drained or overlie deposits of relatively impermeable glacial till (FHWA and AKDOT&PF 2018; Davis et al. 1980). Jims' Landing elevation ranges from 279 feet at the entrance to 227 feet at the boat landing. In some areas, heavy public use has reduced vegetation, exposing soils to erosion and hardening. The Kenai River also exhibits erosion along shores, and substantial erosion was documented in the project area in the past. Erosion is believed to occur during glacial outburst flood events, but may also occur during high summer flows that approach bankfull capacity (PND 2021a). In 1995, flooding eroded much of the streambank upstream of the boat ramp, parallel to the Jims' Landing Access Road. In 2003, root wads were installed for bank stabilization.

3.3 Water Quality

There are no water quality concerns in this portion of the Kenai River. However, Sterling Highway, Skilak Lake Road, and Jims' Landing road and parking areas are likely sources of runoff deposited into wetlands and the Kenai River. Runoff consists of sand, gravel, deicing agents, and potential drips of oils and lubricants that are carried with melt water or rain water into adjacent wetlands, Jean Creek or the Kenai River. There are no current storm water management standard practices for drainage and storm water runoff for Sterling Highway (FHWA and ADOT&PF 2018; HDR 2003) and Jims' Landing. There are no cases of nonpoint pollution, exceeding permissible limits for roadway runoff documented within the Sterling Highway project area (FHWA and ADOT&PF 2018).

3.4 Hydrology and Floodplains

Hydrology

The mean annual precipitation for Cooper Landing is approximately 21 inches and snowfall 47 inches (WRCC 2020).

The boat ramp experiences fast moving water velocity of the Kenai River. High river velocity results in bank erosion, as evidenced by the undercutting of banks. Lower velocities on the inner bend of the river allow for deposition of sand and cobbles that create sand/gravel bars. The average Kenai River discharge (measured at the U.S. Geological Survey (USGS) Cooper Landing gage, #1528000) during Jims' Landing peak operating months, ranges from a low of 2,070 cubic feet per second (cfs) in May to a high of 6,940 cfs in July. Average velocities at the toe of the existing ramp during average July flows are approximately 4.5 feet per second (fps).

Floodplains

Jims' Landing is within the Kenai River floodplain. In 1995, flooding occurred that eroded much of the streambank upstream of the boat ramp, parallel to the Jims' Landing road. In 2003, root wads for bank stabilization were installed terminating approximately 30 feet upstream of the ramp. During 2012, Jims' Landing again experienced flooding with the river overtopping the roadway (Figure 3-1). Jims' Landing occupies approximately 1.2 acres of the floodplain.

Applicable floodplain regulations include Executive Order (EO) 11988, as amended, Floodplain Management, May 24, 1977. The basic requirement of EO 11988 is that a Federal agency avoid construction or management practices that would adversely affect floodplains unless that agency finds that (1) there is no practical alternative, and (2) the proposed action has been designed or modified to minimize harm to or within the floodplain.

Figure 3-1 Flooding of Jims' Landing during 2012 (Source: USFWS, Steve Miller).

3.5 Water Resources

A preliminary jurisdictional delineation was not conducted for the project study area at the time this EA was prepared.

Water resources account for more than 4,630 acres, or approximately 10 percent, of the WRA. Aquatic and riparian habitats associated with these systems contain unique plant communities and other distinguishing features. While riparian habitats account for only 5 percent of the Refuge, this habitat is some of the most valuable habitat for wildlife. Approximately 199 species use riparian habitats on the Refuge during some cycle of their lives, and 139 vertebrate species use them specifically for breeding (USFWS 1985).

There are two watercourses in the project area: Jean Creek and the Kenai River. Wetlands are also present and discussed below in Section 3.6 Wetlands. The riverine habitats (unconsolidated bottom upper perennial riverine wetlands) cover approximately 0.31 acres (1.7 percent) of the study area (PND 2021b). Jean Creek was previously altered during the construction of Skilak Lake Road (USFWS 1993).

Jean Creek**,** a tributary of the Kenai River, influences the drainage characteristics of the project area and is influenced by fluctuating levels of the Kenai River (USFWS 1993). Jean Creek is 3.1 miles in length with 1,200 linear feet in the project area. The creek is part of an aquatic habitat

complex that includes sloughs and wetlands. It is an important resource and component of the riparian habitat that provides rearing habitat for juvenile salmonids, habitat for other wildlife, water quality functions, and nutrient cycling.

The Kenai River is the most dominant aquatic feature of the Kenai Peninsula, Refuge and WRA. The river runs east to west approximately 70 miles from Kenai Lake to Cook Inlet with 18 river miles within the Refuge and 1,190 linear feet in the project area. The Kenai River is fed from many drainage basins via streams and subsurface flows. The river provides important functions including connectivity for transporting water (e.g., glacial melt) from lake to lake, providing a migration corridor for anadromous and native fish and wildlife, supporting hydrological functions of wetlands and groundwater, providing recreation opportunities for sports fishing, boating and wildlife viewing, supporting ecological functions by providing aquatic and riparian habitat for anadromous and resident fish, and breeding, foraging and cover habitat for numerous wildlife species.

The Kenai River is a federally listed traditional navigable water under the jurisdiction of the U.S. Army Corps of Engineers (USACE). Tributaries, such as Jean Creek (and associated wetlands), are also under USACE jurisdiction. Management and protection of these resources is a high priority of the Refuge.

3.6 Wetlands

Wetlands represent 3 percent (59,400 acres) of the Refuge and 2.6 percent (1,140 acres) of the WRA. There are approximately 4.11 acres of wetland habitat in the project area. This represents 0.4 percent of the wetland habitat in the WRA and approximately 0.007 percent of the Refuge wetland habitat. The project area is part of the Kenai River System. Wetlands provide valuable wildlife habitat that contributes to the survival and reproductive success of 96 vertebrate species (UFWS 2010). Wetland types in the project area include riverine and palustrine. Please refer to Appendix 2 for more information. Riverine type (Jean Creak and Kenai River) is discussed above in Section 3.5 Water Resources.

Water regimes vary between saturated and semi-permanently flooded. These wetlands are connected hydrologically to the Kenai River and perform important hydrological, ecological, and water quality functions. Among the valuable abiotic and biotic functions provided:

- groundwater recharge
- groundwater discharge
- streamflow moderation
- shoreline, stream bank, and soil stabilization
- sediment retention and pollution removal
- food chain support
- wildlife habitat

Wetland classifications presented below are based on the USFWS classification of wetlands and deepwater habitats (Cowardin et al 1979) and generalized wetland habitats described by Flagstad (2018). The following generalized palustrine wetlands were identified in the project area, with preliminary corresponding USFWS classifications cross-referenced below. A preliminary jurisdictional delineation was not completed at the time this EA was prepared. The following wetland classes likely are present:

- *Forested/shrub wetlands,* characterized by saturated soils and evidence of drainage features (i.e., low-lying depressions, swales, rivulets), is likely present in the project area; however, the GIS overlay analysis could not determine coverage area (PND 2021b).
- *Shrub Bog Wetlands,* similar to deciduous shrub thicket wetlands, represent palustrine scrub-shrub broad-leaved deciduous or needle-leaved evergreen wetlands. These cover approximately 3.56 acres or 20 percent of the project area (PND 2021b).
- *Emergent Wetlands* (including *Deciduous Shrub Thicket Wetlands*) are typically more saturated or seasonally inundated than forested and shrub wetland types; those adjacent to fish-bearing waters may also provide habitat when inundated (HDR 2010). Emergent wetlands represent persistent emergent or palustrine scrub-shrub broad-leaved deciduous wetlands. These wetlands cover approximately 0.23 acres or 1.3 percent of the project area (PND 2021b).
- Ponds are closely associated with the Kenai River (nearby or directly adjacent). Ponds in the vicinity may correspond with Alaska Native cultural sites or artifacts (HDR 2010). Seasonally inundated wetlands (ponds) were identified preliminarily as emergent or unconsolidated bottom palustrine deciduous wetlands. These wetlands cover approximately 0.01 acres or 0.006 percent of the project area (PND 2021b).

Current wetland impacts and management concerns include gravel and sediment deposition from the existing parking lots and road during flood events. Additionally, these wetlands likely are affected by surface water runoff from vehicles.

Applicable regulations for wetland habitats include Clean Water Act Section 404 and EO 11990 613 FW 2 Wetland Protection. EO 11990 directs all Federal agencies to minimize the destruction, loss, or degradation of wetlands; and preserve and enhance the natural beneficial values of wetlands in the conduct of the agency's responsibilities.

3.7 Vegetation and Habitat

The Refuge is part of the southcentral ecosystem characterized by alpine tundra, estuarine or riparian areas, black spruce forest and peat bog, hardwood and mixed spruce–hardwood forests, black spruce forest, and white spruce forests. Vegetative communities cover approximately 39,368 acres (89.4 percent) of the WRA. The remaining 4,630 acres (10.6 percent) are covered by water resources. Forested habitats dominate the landscape, accounting for approximately 37,438 acres or 95 percent of all vegetative cover. Other vegetative communities, including shrub, herbaceous, and alpine communities make up approximately 1,930 acres (5 percent).

The proposed action is located in the eastern boundary of the WRA along the Upper Kenai River and consists of Closed Deciduous Forest, Closed Mixed Forest and Woodland Needleleaf Forest communities. Dominant deciduous forest species include quaking aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*) and black cottonwood (*Populus balsamifera*). Needleleaf forests consist of white and black spruce (*Picea glauca* and *P. mariana*). Fires burned 167,182 acres of the Kenai Peninsula in 2019. These fires included areas within the Refuge and areas within Jims' Landing. Ecological succession since the wildfire includes shrub and herbaceous communities, as well as riparian open deciduous communities. The herbaceous and shrub habitats include grasses, sedges and low shrubs. Threats to vegetation and habitat include wildfires, invasive plant species, forest insect pests (e.g., Spruce Bark Beetle (*Dendroctonus rufipennis*)) and climate change. A complete tree survey was not conducted in the study area.

On the Refuge, riparian habitat is the most valuable habitat to wildlife. It supports 36 species of birds and is used by all wildlife that occur in the Refuge. Gravel and cobble habitat (river alluvial floodplain) is also present at Jims' Landing.

Special status plant species. Special status plant surveys were not conducted in the proposed project area. A portion of vegetation surveys for the Sterling Highway MP 45 to 60 project overlapped Skilak Lake Road and the eastern portion of the project area. The surveys did not extend into Jims' Landing. No sensitive plants were identified in the survey area (HDR, Inc. 2006). Two species of concern, spotted lady's slipper (*Cypripedium guttatum*) and Alaska rein orchid (*Piperia unalascensis*), have the potential to occur in the project area (FHWA & AKDOT&PF 2018).

3.8 Fish and Essential Fish Habitat

Within the project area, there are 10 species of resident/native and anadromous fish that are known to occur or likely occur during some part of their lifecycle (FHWA and ADOT&PF 2018). The 2020 Anadromous Waters Catalog (AWC) reports that the Kenai River (AWC #244-30-10010) supports Chinook (*Oncorhynchus tshawytscha*), sockeye (*O. nerka*), coho (*O. kisutch*), and pink (*O. gorbushca*) salmon spawning. The Kenai River is an essential migration corridor for anadromous fish and also provides spawning, rearing and overwintering habitat.

Upriver of the project area, there is rearing habitat for Chinook salmon, coho salmon, and Dolly Varden (*Salvelinus malma*). Coho salmon rearing habitat occurs between Jims' Landing and Skilak Lake, and Jean Creek supports coho salmon spawning (Giefer & Blossom 2020). Coho salmon return during two spawning runs: an early-run late July and a late-run in September. The early-run coho spawn in Jean Creek. Juveniles use any barrier-free tributary reach. Chinook salmon return to the Kenai River during two distinct spawning runs, early run and a late run. Juvenile Chinook are found throughout the Kenai River and its larger tributaries. Sockeye salmon return to spawn during two spawning runs. Spawning reaches are often associated with lake systems where rearing juveniles remain for up to two years. Skilak Lake accounts for 70 percent of the sockeye rearing habitat in the Kenai River drainage. Pink salmon do not spawn or rear in the proximity to the project area but use the Kenai River for in-migration and out-migration. Pinks begin out-migration immediately after spawning. Chum salmon (*O. keta*) are rare in the Kenai River. Steelhead (*O. mykiss*) presence in the Kenai River was unknown until 1998 but its use of the Kenai River System remains poorly understood; however, rainbow trout, freshwater species of *O. mykiss*, are present in the Kenai River. Dolly Varden, lamprey (*Petromyzon marinus*), eulachon (*Thaleichthys pacificus)*, and whitefish (*Coregonus sp*.) are also reported to be present.

There are no Federal or State-listed endangered, threatened or sensitive fish species in Alaska.

Two non-native species are known to occur in the Kenai River reach associated with the project area: burbot (*Lota lota*) and arctic grayling (*Thymallus arcticus*).

All waters that support anadromous fish species are classified Essential Fish Habitat (EFH) and regulated by National Marine Fisheries Service (NMFS). Waters designated as anadromous by Alaska Department of Fish & Game (ADF&G) are considered EFH, thus, regulated by NMFS. Jean Creek, Kenai River and connected wetlands would be considered EFH for salmon species that are known to occur or have the potential to occur in the project area.

3.9 Wildlife

The Kenai River ecosystem is host to more than 175 species of mammals, birds and amphibians that live in, seasonally use, or visit (FHWA and ADOT&PF 2018). There are no ESA-listed or ESA-proposed or candidate species as Threatened or Endangered under the ESA in the project area. Bald eagles, protected under the Bald and Golden Eagle Protection Act (BGEPA), are present in the project area. There is at least one bald eagle nest within 1,000 feet of Jims' Landing. Please refer to Appendix 3 for more information.

Bald eagles are common in the project area and fall under the protections of the BGEPA (16 U.S.C. 668-668c). BGEPA, enacted in 1940, and amended several times, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts*, nests, or eggs (*"parts" includes feathers). The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part*, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." "Disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

An aerial survey conducted in April 2014 identified 4 active and 21 inactive eagle nests within the Skilak Highway MP 45-60 Project area (FHWA and ADOT&PF 2018). A ground survey was conducted in November 2015 indicated a nest within 660 feet of Jims' Landing. A review of GoogleMap images also showed a bald eagle nest at Jims' Landing near the double vault toilet (Figure 3-2). However, during a visit to Jims' Landing by a PND engineer in December 2020, the same nest tree showed no signs of the 2016 nest or any nest material at Jims' Landing (Figure 3-3). An anecdotal account by visitors of Jims' Landing described the 2016 nest failed after an adult eagle attacked and either broke the eggs or killed the young of this nest. The same observer reported the nest collapsed after a branch holding the nest broke during a storm (AlaskaRain 2019).

Mammals observed or likely to occur in the project area include brown bears (*Ursus arctos*), black bears (*U. americanus*), moose (*Alces alces*), beaver (*Castor canadensis*), ermine (*Mustela erminea*), coyote (*Canis latrans*), red squirrel (*Sciurus vulgaris*), voles (*Microtus sp*.), and shrews (*Sorex sp*.). Avian species observed or likely to occur in the project area include bald eagle (*Haliaeetus leucocephalu*s), glaucous winged - herring gull hybrid (*Larus spp*.), raven (*Corvus corax*), spruce grouse (*Falcipennis canadensis*), and numerous woodland passerines (e.g., dark-eyed junco (*Juncus hyemalis*), yellow-rumped warbler (*Setophaga coronata*), Swainson's thrush (*Cathrus ustulatus*), boreal chickadee (*Poecile hudsonicus*), gray jay (*Perisoreus canadensis*), and alder flycatcher (*Empidonax alnorum*) (USFWS 2010). The wood frog (*Lithobates sylvaticus*) is the only amphibian species present.

Threats to wildlife species include predation, loss of habitat to energy development and wildfires, roadkill, vehicle collisions, hunting and harvest activities, disease, human disturbance, and climate change. Jims' Landing is within a No Firearm Discharge area; hunting is restricted and trapping closed under both State and Refuge regulations. Bears cannot be harvested in the WRA.

Figure 3-2 GoogleEarth image showing bald eagle nest from September 2016 (facing north).

(GoogleEarth Street view 2021; imagery September 2016).

Figure 3-3 Photo of nest tree without the bald eagle nest taken in November 2020 (facing east).

(Source: Chip Courtright, PND Engineers.)

3.10 Cultural Resources

This section is based on the Cultural Resources Literature Review and Field Survey Report for Jims' Landing Boat Launch Access and Parking Improvements prepared by Stephen R. Braund & Associates (SRB&A) (2020).

The survey area for the cultural resources study was approximately 28 acres where project improvements may occur and which contain areas that have not been disturbed previously. The final area of potential effects (APE) will be based on the final project design. Between September 28 and October 2, 2020, SRB&A conducted a pedestrian survey and subsurface testing of high-potential landforms to identify and evaluate National Register of Historic Places (Register) eligibility of any previously undocumented archaeological or historic resources that may be affected by the proposed project.

The Sqilantnu Archaeological District contains a widespread site complex, covering at least 4,000 acres. It extends over perhaps 8,000-10,000 years of prehistory and protohistory. The site complex is one of the major archaeological properties in Alaska. The Sqilantnu Archaeological District reaches from Kenai Lake to Jims' Landing. There are two AHRS sites reported within the project area consisting of the Sqilantnu Archaeological District (KEN-00156) and the newly documented KEN-00719 site. The newly recorded site KEN-719 is within the project area but outside the archaeological district boundary. Because the site is so near and obviously related to the archaeological district it is considered to be contributing to the district although geographically

separate from it (personal communication USFWS). SRB&A's survey did not identify any cultural features associated with KEN-00133 extending within the project area. Furthermore, SRB&A did not identify any cultural features within the project area associated with the Sqilantnu Archaeological District polygon boundary, which overlaps the eastern edge of the project area. A portion of the project area is within the boundary of the Squilantnu Archaeological District (KEN-156) and was determined to be eligible for inclusion on the Register.

The Sterling Highway (KEN-653), immediately adjacent to the study area, is listed on the AHRS, but was determined not eligible for inclusion on the Register.

3.11 Recreational Opportunities

The WRA provides numerous year-round recreation activities including camping, hiking, cross country skiing, fishing, hunting, photography, snowshoeing and scenic and wildlife viewing. The Kenai River is a heavily used recreational attraction due to its proximity to Sterling Highway and its fishing, boating, floating, scenic and wildlife viewing resources. The upper Kenai River is a "non-motorized" use area that promotes rafting, canoeing, kayaking, and bank fishing. Special restrictions on hunting and trapping apply and are managed to provide enhanced opportunities for wildlife viewing, environmental education, interpretation, and photography (USFWS 2010). Jims' Landing is within a No Firearm Discharge area, and special restrictions close hunting and trapping within a ¼ mile of Jims' Landing. Bears cannot be harvested in the WRA.

The parking area at Jims' Landing is used by overnight campers accessing designated campsites up and downstream of Jims' Landing. Hunters exiting at Surprise Creek also use Jims' Landing parking areas throughout the year.

The majority of Jims' Landing boat ramp usage occurs between the months of June through October for sport fishing and river floats, and through commercial (or guided) services, on the Kenai River. Based on conditions, this section of the river and Jims' Landing are used throughout the year. Authorized guides must obtain a special use permit from the Refuge, subject to the requirements of the permit's general and special conditions. Permitted guides operating on the upper and lower Kenai River utilize the boat ramps at Jims' Landing, and the Upper and Lower Skilak campgrounds.

- The last season of normal operations was during 2018 (season not affected by fires or coronavirus disease (COVID 19) pandemic (USFWS personal communication). In 2018, twenty permit holders were authorized to conduct sport fishing services. Scenic float trips typically see half as many private boaters compared to scenic float guides. The total sport fishing starts and retrievals on the Upper Kenai River was 4,411 with total Visitor Use Days (VUDs) of 14,027.

Table 3-1 presents estimates for sport fishing and scenic floats on the Upper Kenai River during an average year (for year 2018). The total scenic float starts and retrievals on the Upper Kenai River was 1,356 with total VUDs on the river of 11,700. The combined totals for floating and fishing during 2018 were:

- Total number of starts and retrievals on the Upper Kenai River (guided and private): 5,767

- Total number boating on the Upper Kenai River: 25,727

Table 3-1 Summary of Estimated Sport Fishing and Scenic Floats for Year 2018.

Category	Number of Permits	Number of Starts and Retrievals	Visitor User Days
Sport fishing			
Private/Public	-	3,018	9,388
Guided Permit Holders[1]	20	1,393	4,357
Incidental Permit Holders (UKRI)	32	95	297
Scenic Floats			
Private Permit Holders	not applicable	452	3,900
Guided Permit Holders[2]	8	904	7,799

[1] Six sport fishing permit holders reported 50 or fewer starts for an average 18 starts with 49 VUDs per permittee. Seven sport fishing permit holders reported between 100-200 starts for an average 116 starts and 337 VUDs per permittee.

[2]Three (+1 Did Not Operate (DNO)) permit holders in the Upper Kenai River Float (UKRF) Permit type 01A program completed 694 starts for a total 6,476 VUDs, with an average 231 starts and 2159 VUDs per permit. Four (+2 DNO) permit holders in the UKRF 01B program completed 210 starts and 1323 VUDs with an average 105 starts and 662 VUDs per permit.

3.12 Public Access

Jims' Landing is accessed by vehicles via Sterling Highway at MP 58 to Skilak Lake Road for 0.2 miles to Jims' Landing Access Road. The Landing is also accessed via hiking trails and by boating the Kenai River (most boat traffic begins at Sportsman's Landing near Sterling Highway MP 55). Sterling Highway is a two-lane, paved highway along the northern border of WRA. The speed limit is 55 miles per hour (mph) and it serves as a major route for intrastate commerce and travel. From MP 37 to MP 75, the Highway is designated a state scenic byway. Skilak Lake Road is a two-lane road with a speed limit of 35 mph.

The parking area at Jims' Landing is used by overnight campers accessing designated campsites up and downstream of Jims' Landing.

3.13 Visual Resources

The visual analysis area is located off the Sterling Highway, 10.1 miles west of Cooper Landing, Alaska, on Skilak Lake Road near the highway intersection (Appendix 4). The Proposed Action is

accessed from Skilak Lake Road to the north and the Kenai River that runs south of the analysis area. The visual resources are framed by the Kenai Mountains within the larger Chugach-St. Elias Mountains ecoregion, with the Kenai Mountains rising to 3,000 feet. The vegetation within this area is an intermediate aged 'closed mixed forest' of evergreen and deciduous trees of white spruce (*Picea glauca*), black spruce (*Picea mariana*), quaking aspen (*Populus tremuloides*), and paper birch (*Betula papyrifera*). The Kenai River and surrounding habitat frame the Jims' Landing facility.

3.14 Socio-Economic Conditions

The overall economy of the Kenai Peninsula is diverse and healthy, and tourism is an important part of the economy. Recreational opportunities available at the Kenai River contribute to both local and regional economies. The Refuge lies within the Kenai Peninsula Borough (KPB), which is comprised of the Kenai Peninsula, Cook Inlet, and a large, mostly unpopulated area, northeast of the Alaska Peninsula. The total population of the Borough was 58,708 (US Census 2020a).

The community of Cooper Landing is the closest community to Jims' Landing. As Cooper Landing is located between Anchorage and Jims' Landing, all visitors travelling from Anchorage via the Sterling Highway pass through this community. Cooper Landing is approximately 10 miles east of the project area with a population of 478 (US Census Bureau 2020b). The US Census 2019 population estimates of the KPB shows the race and ethnicity composition of 83.3 percent white, 0.8 percent Black or African American, 8.0 percent American Indian and Alaska Native, 1.9 percent Asian, 4.3 percent Latino or Hispanic, and 0.3 percent Native Hawaiian and Other Pacific Islander (U.S. Census Bureau 2020a). There are no environmental justice communities within the project planning area (USFWS 2021).

3.14.1 Local and regional economies

The economic area for the Refuge is Kenai Peninsula Borough, Alaska, with the assumption that visitor expenditures occur primarily within this borough. Based on reporting from 2011, visitor recreation total expenditures were $83.7 million, with non-residents accounting for $69.3 million or 83 percent of total expenditures. Expenditures on fishing activities accounted for 64 percent of all expenditures, followed by non-consumptive activities (34 percent) and hunting activities (2 percent) (Caudill and Carver 2013). The cities of Kenai, Soldotna, and Seward are within approximately 40 miles, 32 miles, 23 miles respectively of Jims' Landing. Several other small towns are also within a fifty-mile radius. The Cooper Landing Chamber of Commerce lists the refuge as one of the area's main attractions. Jims' Landing averages about 25,000 visitors per year.

3.15 Administration

ANILCA, Title VIII, Section 810 requires Federal agencies with jurisdiction over lands in Alaska to evaluate the potential impacts of proposed actions on subsistence uses and needs. This document is completed and included in Appendix 8.

Floodplain regulation EO 11988, as amended, Floodplain Management, May 24, 1977 requires that a Federal agency avoid construction or management practices that would adversely affect floodplains unless that agency finds that (1) there is no practical alternative, and (2) the proposed action has been designed or modified to minimize harm to or within the floodplain.

EO 11990 613 FW 2 Wetland Protection. EO 11990 directs all Federal agencies to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance the natural beneficial values of wetlands in the conduct of the agency's responsibilities.

Coordination with the State of Alaska

In 1982, the Service and the ADF&G signed a Master Memorandum of Understanding (MOU) that defines the cooperative management roles of each agency and identifies the framework for cooperation between the two agencies (ADF&G and USFWS 1982). In this agreement the agencies recognized the Service as the agency with the responsibility to conserve fish and wildlife and their habitats and regulate human use on Service lands. The ADF&G was recognized as the agency with the primary responsibility to manage fish and resident wildlife within the State of Alaska. Furthermore, the ADF&G agreed to manage fish and resident wildlife populations in their natural diversity on Service lands. The Service and ADF&G share a concern for all fish and wildlife resources and their habitats, and both agencies are engaged in extensive fish and wildlife conservation, management, and protection programs.

Tables 4-1 through 4-5 provide additional, brief descriptions of each resource affected by the proposed action.

4 Environmental Consequences of the Action

This section analyzes the environmental consequences of the action on each affected resource, including direct and indirect effects. This EA includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an "affected resource" or are otherwise considered important as related to the proposed action. Any resources that will not be more than negligibly impacted by the action and have been identified as not otherwise important as related to the proposed action have been dismissed from further analyses.

Tables 4-1 to 4-5 provide:

1. *A brief description of the affected resources in the proposed project area;*
2. *Impacts of the proposed action and any alternatives on those resources, including direct and indirect effects.*

Table 4-6 provides a brief description of the anticipated cumulative impacts of the proposed action and any alternatives.

Impact Types:

- *Direct effects are those which are caused by the action and occur at the same time and place.*
- *Indirect effects are those which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.*
- *Cumulative impacts result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.*

Table 4-1 Affected Natural Resources and Anticipated Impacts of the Proposed Action and Any Alternative

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
Wildlife and Fish Species The Kenai River and its tributaries with associated habitats support bald eagles, migratory waterfowl, brown and black bears, moose, and beaver. All of these species use the project area. Kenai River supports major runs of four Pacific salmon species (Chinook, sockeye, coho and pink). Kenai River also supports healthy populations of resident rainbow trout and Dolly Varden. Jean Creek, a tributary of Kenai River, supports coho salmon spawning.	**Alternative A**: Under the No Action Alternative, disturbance impacts to wildlife and fish would not be affected. Primary impacts to wildlife and fish include disturbance of routine movements and activities caused by human disturbance. These impacts would continue and may increase over time as visitation and overcrowding increases. **Alternative B**: Under Alternative B, there would be an increase in disturbance impacts to wildlife from human activities, and additional potential conflicts between recreation users and wildlife on the new trails and parking areas. Changes in wildlife activity patterns due to increased human activity, during construction, and use of new expanded parking and trail areas could result in additional energy consumption by individuals and increase predation, resulting in mortality of wildlife. It is likely there would continue to be some conflicts between large mammals and humans within the project area; however, visitor education and project design would minimize conflicts. Impacts would include disruptions in habitat use up to approximately 0.25 mile around Jims' Landing; these include startle responses from instantaneous noises, loss of habitat, and human presence. These disruptions could result in increased expenditure of energy detrimental to individuals during sensitive periods (e.g., breeding and rearing), nest abandonment during avian nesting season, breeding failures, and juvenile mortality. Additional impacts include avoidance of habitat used by animals during construction and peak visitor periods. Implementing BMPs and avoidance and minimization measures during construction would reduce impacts caused by construction activities to insignificant. These include completing clearing and grubbing of vegetation outside of the bird nesting period (generally April 15-July 15) and conducting nesting bird surveys prior to construction within 500 feet of the project footprint.

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	Establishing breeding bird nest buffers for active nests until nesting is completed and birds have left the nest. Expansion of the existing Jims' Landing footprint would result in a loss of up to 3.0 acres of habitat used by wildlife and introduce new human disturbance to areas used by wildlife for foraging, breeding and cover. The loss of habitat is less than 0.05 percent of the remaining habitat available for wildlife in the WRA. These impacts, while negative, would be insignificant based on the remaining habitat available to wildlife at Jims' Landing and the Refuge. The new boat ramp would disturb anadromous and native fish of the Kenai River from turbidity, sedimentation, and underwater noise. Installation of a turbidity curtain and other BMPs would reduce these effects to insignificant. Overall impacts to anadromous and resident fish would likely be minor and adherence to federal and state regulations and permit requirements would avoid and minimize impacts. **Selected Alternative:** Under the Selected Alternative, impacts would be similar to Alternative B. Additional impacts include the following. Expansion of the existing footprint would result in a loss of up to 3.0 acres of habitat used by wildlife. The loss of habitat is less than 0.05 percent of the remaining habitat available for wildlife in the WRA. Installation of the viewing platform would reduce the habitat along the riverbank used by mammals; however, this impact would be insignificant due to the availability of undeveloped habitat along the Kenai River. The use of light-penetrating materials for the viewing platform would avoid any shading effects to fish habitat; thus, effects would be discountable. Installation of root wads for bank stabilization provides habitat for fish species and their prey which would be a beneficial impact for fish. The selected parking option avoids Jean Creek and habitat for brown bears and other species that use Jean Creek for movement and other activities.

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
Threatened and Endangered (T&E) Species and Other Special Status Species No T&E species have been observed or have the potential to be in the project area. There is no designated critical habitat within the project area. Bald eagles are protected under BGEPA, managed by the USFWS. Bald eagles occur and nest in the project area. At least one nest is known within 660 feet of Jims' Landing. Migratory birds are present in the project area and use the area for nesting and other activities. Migratory Bird Treaty Act (MBTA). Under the MBTA, it is unlawful without a waiver to pursue, hunt, take, capture, kill, or sell species of birds listed therein as migratory birds.	**Alternative A**: Under the No Action Alternative, there would be no impacts to threatened or endangered species (and proposed or candidate species), special status species, or bald eagles. This alternative will not meet the purpose and need of the project. **Alternative B:** There would be no impacts to threatened or endangered species (and proposed or candidate species), special status species, or bald eagles. This alternative will not meet the purpose and need of the project. The proposed project is within 660 feet of a bald eagle nest. The off-site parking area would introduce new disturbance to undeveloped areas, potentially affecting bald eagles by changing the landscape. Disturbance impacts from increased human activity and changes or loss of habitat from the expansion of developed areas and the loss of large trees could result in nest abandonment or mortality of young during nesting season. To avoid disturbance impacts to bald eagle and their nests, the Service will implement National Bald Eagle Management Guidelines (USFWS 2007a) including conducting bald eagle nest surveys within ½ mile of construction and monitoring of active bald eagle nests, prior to and during construction as applicable. These would include distance, timing, and landscape buffers. With the implementation of bald eagle management guidelines, impacts to bald eagles would be avoided. There would be negative disturbance impacts to migratory birds during construction of Jims' Landing Improvements project. However, implementation of the USFWS Land Clearing Timing Guidance for Alaska would reduce impacts to migratory birds to insignificant. **Selected Alternative:** Disturbance impacts would be similar to Alternative B. The permanent removal of 89 trees greater than 12 inches DBH would alter the aerial canopy landscape or screening of Jims' Landing for bald eagles. The impacts to bald eagles are dependent on the sensitivity of the individual eagles. Sensitivity may be related to visibility of human activity, duration, noise level, area of activity, and an eagle's previous experience

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	with human disturbance (USFWS 2021a). Bald eagles are most sensitive to disturbance during courtship and nest building (generally January), followed by egg laying and incubation and hatching periods (generally March to April). Given the historic human use of Jims' Landing and the dynamic landscape (e.g., changes due to fire and flood events), it is likely that bald eagles nesting in the area are acclimated to the human and natural disturbances at Jims' Landing. Therefore, impacts to bald eagles and their habitat would be discountable and insignificant. In addition, the implementation of the National Bald Eagle Management Guidelines would reduce impacts to insignificant.
Vegetation and Habitat (including vegetation of special management concern) Jims' Landing habitats are mapped as closed mixed forest, closed deciduous forest and woodland needleleaf with an herbaceous and shrub understory. The Kenai River system is a water of the US and managed by the USACE under the Clean Water Act, Section 404. Riparian habitat is the most valuable to wildlife. It supports 36 species of birds and is used by all wildlife that occur in the Refuge.	**Alternative A**: Under the No Action Alternative, disturbance impacts to vegetation and habitat would not change. Trampling of vegetation around human use areas and deposition of sediments into wetlands during flood events would continue and may worsen over time. Loss of riverbank due to bank erosion would continue to reduce value as rearing habitat for juvenile salmonids. This alternative will not meet the purpose and need of the project. **Alternative B**: Under this alternative, vegetation clearing, grubbing, removal of trees, and grading would result in the loss of up to 1.7 acres of vegetation. A loss of 1.7 acres represents less than 0.05% of WRA habitat and would be an insignificant loss of habitat given the remaining 44,000 acres. Construction equipment and personnel have the potential to introduce or disperse non-native plant and weed species. This alternative would result in the removal of nine trees over 12 inches DBH (generally spruce, birch, and cottonwood species). Off-site Parking Option 1 would result in the removal of 19 trees over 12 inches DBH. A tree survey was not conducted for Off-site Parking Option 2; however, three birch over 12 inches DBH would be removed for the trail connecting the parking area to Jims' Landing. Removal of trees permanently remove wildlife habitat, but this impact would be discountable due to the abundant forested area surrounding the project footprint.

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	Implementation of BMPs during construction include but are not limited to construction BMPs to prevent introduction and spread of weeds, clearly marking disturbance areas, environmental sensitive area, protected trees and vegetation, implementation of the Refuge's Integrated Pest Management Program, and reseeding and replanting disturbed areas with native vegetation will benefit vegetation and habitat and reduce impacts. This alternative does not meet the purpose and need of the project because it does not address the issue of safety and congestion at Jims' Landing. **Selected Alternative**: Disturbance impacts and measures to reduce impacts are similar to Alternative B. Approximately 67 trees greater than 12 inches DBH would be removed for this Alternative, and with Off-site Parking Option 1, an additional 22 trees would be removed permanently (18 in the parking lot and walkway areas plus four trees for temporary construction access). The total number of trees permanently removed will be 89. Under the Selected Alternative, landscaped 'islands' would be raised above the existing road and parking grade. These islands would be mounded, reseeded and may include trees in the landscape design. Under this alternative including Off-site Parking Option 1, vegetation clearing and grubbing would result in the loss of up to 3 acres of vegetation, which represents less than 0.008% of WRA habitat and would be an insignificant loss of habitat given the remaining 44,000 acres.
Air Quality and Noise Quality The Refuge is designated a Class II air quality area under the Clean Air Act; Class II allows for some incremental increase in pollution over base-line concentrations. Vehicles using the Skilak Lake Road during dry periods stir up dust and exhaust from these vehicles degrades air quality, during periods of high public use (USFWS 2007).	**Alternative A**: Under the No Action Alternative, there would be no disturbance impact changes to air quality or noise quality. Fugitive dust impacts to air quality would remain if the roads and parking areas are not improved. Noise from Sterling Highway and the recreation area would continue. **Alternative B:** Under this alternative, there would be increased localized noise disturbance due to the new off-site parking area. There would be increases in noise during construction but this would be temporary and short term.

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	Air quality may be improved if roads and parking areas are paved with asphalt or other hardened surface or if dust palliatives are applied to gravel by reducing fugitive dust conditions. **Selected Alternative:** Under this alternative, there would be increased localized noise disturbance in the area of the new off-site parking option 1, the increase in parking capacity in Jims' Landing, and the increased area of the boat ramp area. In addition, the removal of vegetation and trees would eliminate natural sound interceptors, thereby increasing noise. The parking areas and roads will be surfaced with gravel. A USFWS-approved dust palliative will be used during construction and to treat the gravel roads and parking areas. While air quality may be improved if roads and parking areas are paved with asphalt or if dust palliatives are applied to gravel, the net effect likely would be negligible due to the increases in visitor use and parking capacity.
Geology & Soils The geology of the Kenai lowlands is characterized by Alaska Peninsular terrane, which consists of siltstone, fine sandstone, and shale (USFWS 2007). Lowland soils are composed of riverine deposits of gravel and sand overlain by variably drained silt loams. Soils are prone to erosion especially along riverbanks.	**Alternative A**: Under the No Action Alternative, soil erosion along the river bank would continue and contribute to sediment input to the Kenai River. Soil compaction would also continue in areas trampled by visitors. **Alternative B**: Under this alternative, clearing and grubbing, development of undisturbed areas and removal of trees would disturb the existing soils and permafrost layer. This would impact the erosion and drainage capabilities of the surface soils, but these issues would be mitigated throughout the design process and with the implementation of BMPs. These impacts would be reduced to insignificant with the implementation of mitigation measures including: design and implement erosion and sediment control measures, reseeding disturbed area, and retaining native weed-free topsoil for future use in restoration. **Selected Alternative:** Majority of disturbance impacts would be similar to Alternative B. Under this alternative, the installation of root wads along the first 40 feet of the bank upriver of the boat ramp would stabilize the river bank and reduce bank erosion.

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	These impacts would be reduced to insignificant with the implementation of mitigation measures including design considerations, erosion and sediment control measures, and retaining weed-free native topsoil for future use in restoration or other on-site activities.
Water Quality There are no water quality concerns in this portion of the Kenai River. However, roadway runoff to wetlands and the Kenai River does occur from Sterling Highway, Skilak Lake Road and Jims' Landing roads and parking areas, resulting in sand, gravel, deicing agents, and potential drips of oils and lubricants carried with melt water or rain water into adjacent wetlands, Jean Creek, and the Kenai River	**Alternative A**: Under the No Action Alternative, there would be no change to the disturbance impacts to water quality conditions. Surface runoff would continue to carry sediment and pollutants to waters. **Alternative B**: Under this alternative, soil disturbances and construction site materials, runoff, and waste would result in minimal impacts on surface water quality. Impacts to water quality would be localized, short-term, and likely not exceed water quality criteria. Soil compaction would reduce the infiltration capacity and increase surface runoff. Accidental petroleum spills could affect water quality, but the spills would be anticipated to be small in volume and would be contained quickly with the implementation of spill containment BMPs. In addition, there would be temporary water quality impacts due to increased turbidity during the construction of the boat ramp. Implementation of BMPs and all permit requirements would reduce impacts to insignificant. Applicable regulations include Clean Water Act Sections 401, 402, and Section 301(a). **Selected Alternative:** Under this alternative, disturbance impacts would be similar to Alternative B.
Water Resources There are two watercourses in the project area, Jean Creek and the Kenai River. Jean Creek is part of an aquatic habitat complex that includes sloughs and wetlands. There are 1,200 linear feet within the project area. The Kenai River runs east-west across the northern region of the Kenai Peninsula.	**Alternative A**: Under the No Action Alternative, the proposed project would not be constructed, there would be no disturbance impact changes to water resources. **Alternative B**: Under this alternative, there would be some negative disturbance impacts to water resources. These include runoff and spills that could impact surface water quality, temporary increases in Kenai River turbidity from the construction of the boat ramp, reduction of infiltration capacity due to increase of impervious surfaces, and an increase of surface runoff. The implementation of BMPs and the revegetation of temporarily disturbed areas would minimize impacts to

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
The Kenai River is a federally listed traditional navigable water under the jurisdiction of the USACE. Tributaries, such as Jean Creek and associated wetlands are also under USACE jurisdiction. Management and protection of these resources is a high priority of the Refuge.	water resources. Improvements to the boat ramp would result in a loss of and discharge to riverine habitat of the Kenai River. This impact would be minimized during design, implementation of BMPs and all permit requirements. **Selected Alternative:** Under this alternative, impacts would be similar to Alternative B. Application of USFWS-approved dust palliatives would reduce fugitive dust, providing a beneficial impact to water resources. Construction of root wads on the Kenai River bank would result in similar impacts as the construction of the boat ramp. Under this alternative, the installation of root wads along 40 feet of bank upstream of the ramp would likely decrease flow velocities between 1.5 to 2 fps along the toe of the boat ramp during average July flows. This is a beneficial impact to the Kenai River because slower velocities would reduce potential bank erosion. The selected parking option avoids impacts to Jean Creek. With the implementation of best management practices and compliance with all permit requirements, these impacts would be reduced to insignificant.
Wetlands Wetlands represent 3 percent (59,400 acres) of the Refuge and 2.6 percent (1,140-acres) of the WRA. There are approximately 4.11 acres of wetland habitat in the project area. This represents 0.4 percent of the wetland habitat in the WRA and approximately 0.007 percent of the Refuge wetland habitat. These wetlands are likely under the jurisdiction of the USACE. Tributaries, such as Jean Creek and associated wetlands, are also under USACE jurisdiction. Management and protection of these resources is a high priority of the Refuge.	**Alternative A**: Under the No Action Alternative, there would be no changes in disturbance impacts to wetland and riparian habitats. Jims' Landing would remain "as is" with no planned development and the Refuge would continue to operate and maintain the area in accordance with current management plans. **Alternative B**: Under Alternative B there would a loss of up to 0.02 acres of wetlands. This is less than 0.01 percent of wetland habitat in the WRA. Disturbance impacts below ordinary high water (OHW) would be 0.04 acres from the boat ramp improvements. Other impacts include fill and excavation associated with road and parking improvements, and trail development between off-site parking and Jims' Landing. Increased footprint would contribute to runoff of pollutants to wetlands. Introduction of nonnative species and pollutants to wetlands and vegetation communities adjacent to the new infrastructure. Under Alternative B, gravel deposition into wetlands and Jean Creek would continue during flood events if the road is not paved with asphalt.

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	Roads and trails would bisect wetlands and streams potentially resulting in wetland function disruptions and degradation of habitat. Under Off-site Parking Option 1 beneficial impacts of trail construction would include installation of an elevated walkway to maintain hydrologic connection of wetlands. Under Off-site Parking Option 2 beneficial impacts of trail construction would include installation of a bridge to maintains hydrologic connection of wetlands and minimize impacts to wetlands and Jean Creek. Further measures to reduce impacts to wetlands would occur during the design phase. With the implementation of best management practices and compliance with all permit mitigation measures, these impacts would be reduced to insignificant. **Selected Alternative**: Under Alternative C, disturbance impacts would be similar to Alternative B. Beneficial impacts would also be similar. There would be a loss of up to 0.3 acres of wetlands. Impacts below OHW would be 0.07 acres resulting from the boat ramp improvements and root wad installation. Temporary impacts would be 0.03 acres to wetlands and 0.01 acres to waters. Gravel deposition during flood events and fugitive dust would continue to impact wetlands during high use periods. However, impacts related to the construction of would be mitigated with the application of USFWS-approved dust palliatives. Off-site Parking Option 1 results in fewer impacts to wetlands. The Selected Parking Option avoids the Jean Creek riparian and wetland area. An overflow area, approximately 50 feet wide, would be incorporated into the access road to maintain hydrologic connectivity between the Kenai River and the adjacent wetland during minor flood events and reduce gravel deposition into wetlands during these events. This is a beneficial impact for wetlands and non-wetland waters. Construction of root wads on the Kenai River bank would result in similar impacts as the construction of the boat ramp. Construction impacts would be temporary. There

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	will be long-term benefits of root wads (e.g., stabilize bank and reduce bank erosion of the Kenai River). With the implementation of best management practices and compliance with all permit mitigation measures, these impacts would be reduced to insignificant**.**
Hydraulics and Floodplains Jims' Landing occupies 1.2 acres of floodplains. The area regularly experiences flooding from the Kenai River with floodwaters topping the road and depositing gravel into wetlands.	**Alternative A**: Under the No Action Alternative, the proposed project would not be constructed, there would be no new disturbance impacts to floodplains, and erosion along banks would continue during flood events and high summer flows. **Alternative B:** Under this alternative, there would be additional disturbance impacts to floodplains from expanding the roadways and parking area. Under this alternative, Jims' Landing would occupy up to 2.4 acres of floodplain, an insignificant impact given the total number of acres along the Kenai River. This alternative complies with EO 11988 and its implementing guidance by minimizing the effects to floodplains to the greatest extent possible. **Selected Alternative:** Disturbance impacts would be similar to Alternative B with the following differences. Under this alternative, Jims' Landing would occupy 4 acres of floodplain. Benefits include maintaining drainage patterns (e.g., use of culverts, elevated walkway, and pedestrian bridge). Under this alternative, the Service meets the purpose and need and complies with EO 11988 and its implementing guidance in the management of floodplains. An overflow area, approximately 50 feet wide, would be incorporated into the access road to maintain hydrologic connectivity between the Kenai River and the adjacent wetland during minor flood events. This is a beneficial impact for floodplains. Through the design process impacts to floodplains would continue to be minimized to the maximum extent practicable.
Wilderness: ANILCA designated about two-thirds (approximately 1.32 million acres) of the NWR as Kenai Wilderness. Jims'	Congressionally designated Wilderness, Andrew Simons Unit, is directly across the Kenai River from Jims' Landing (Figure 1-2).

NATURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
Landing is not within Congressionally designated Wilderness.	**Alternative A**: Under the No Action Alternative, disturbance impacts would be related to continued bank erosion on the opposite bank (Jims' Landing side). **Alternative B:** Under this alternative, there would be a disturbance impact to designated Wilderness from increased localized noise due to the new off-site parking area. There would be increases in noise during construction but this would be temporary and short term. Expansion of the parking area and the boat ramp would result in a disturbance impact to the near view visual quality from the designated Wilderness to a minor degree. Vegetation reestablishment on the boat ramp side of the Kenai River and the vegetation on the south side of the river would reduce impacts to insignificant. **Selected Alternative:** Under this alternative, there would be a disturbance impact to designated Wilderness similar to Alternative B, with the addition of localized noise from the increase in parking capacity in Jims' Landing and the increased area of the boat ramp. In addition, the removal of vegetation and trees would eliminate natural sound interceptors. Vegetation reestablishment on the north (boat ramp) side of the Kenai River and the vegetation on the Wilderness south side of the river would reduce impacts to insignificant.

Table 4-2 Affected Visitor Use and Experience and Anticipated Impacts of the Proposed Project and Any Alternative

VISITOR USE AND EXPERIENCE	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
The Kenai River is a heavily used recreational attraction due to its proximity to Sterling Highway and its sport fishing, boating/floating, scenic, and wildlife viewing resources. The majority of Jims' Landing boat ramp usage is between the	**Alternative A:** Under the No Action Alternative, there would be no change in disturbance impacts. Existing visitor experience conditions, such as overcrowding and congestion of the boat ramp and parking facilities, difficult and unsafe conditions at the boat ramp, and inefficient and unsafe pedestrian conditions would remain and worsen over time.

VISITOR USE AND EXPERIENCE	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
months of June through October for sport fishing and river floats, and through commercial (or guided) services on the Kenai River. Based on conditions, this section of the river and Jims' Landing are used throughout the year. The estimated number of visitors in a typical summer was estimated at 25,000. The Jims' Landing boat ramp is typically used between the months of June through October.	**Alternative B**: Under this alternative, there would be disturbance impacts to visitation and experience. The quality of the visitor experience would likely decrease over time. A new off-site parking area for commercial operators would be a long-term benefit because parking would be closer to the landing and operators would no longer need to cross Sterling Highway to reach the landing. Sufficient public and commercial guide notice using signage and other Refuge communication media, in advance of potential closures or other access limits, would reduce any access impacts to insignificant. The quality of the visitor experience would be expected to improve. **Selected Alternative:** Under this alternative, there would be disturbance impacts to visitation and experience. Adverse impacts would include temporary closures of Jims' Landing facilities for construction. Beneficial disturbance impacts include increasing parking capacity for passenger vehicles and trailers, and adding ADA compliant parking. Increased parking and improved boat ramp conditions would be expected to attract more visitors and improve the experience for return visitors. Under this alternative, the installation of root wads along 40 feet of bank upstream of the ramp would likely decrease flow velocities between 1.5 to 2 fps along the toe of the boat ramp during average July flows providing a beneficial impact to this resource. Signage to alert boaters of the upcoming boat ramp would improve safety conditions of boaters. Alternative C would result in beneficial impacts to visitor use and experience by improving safety and ease of use for retrieving and launching boats. The quality of the visitor experience would be expected to improve, which would meet the purpose and need of the project.
Visual Resources The Kenai River and surrounding habitat frame the Jims' Landing facility.	**Alternative A:** Under the No Action Alternative, disturbance impacts to the scenic quality of the project area would not change. Bank erosion would continue to degrade some views of the river as vegetation is lost. **Alternative B**: Under this alternative, the scenic quality of Jims' Landing would be modified by expanding the existing facilities; however, these impacts would be discountable due to the scenic river views and vegetation screening the views of Skilak Lake Road and Sterling

VISITOR USE AND EXPERIENCE	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	Highway. New off-site parking area off of Skilak Lake Road would be visible from the road and degrade localized views. Removal of vegetation and trees, and construction of artificial features such as expanded boat ramp, off-site parking and other facilities would adversely affect the "near" view to a minor degree, but as new vegetation becomes established, those effects would be improved by vegetative screening. **Selected Alternative**: Under this alternative, disturbance impacts would be similar to Alternative B.
Public Access Jims' Landing is accessed by vehicles via Sterling Highway at MP 58 to Skilak Lake Road for 0.2 mile to Jims' Landing Access Road. It is also accessed via hiking trails and Kenai River. There is one parking area at Jims' Landing and one off-site parking area on the north side of Sterling Highway.	**Alternative A:** Under the No Action Alternative, public access conditions would remain unchanged with overcrowded conditions in the parking areas and boat ramp. In addition, commercial operators would continue to use the unsafe access from the north side of Sterling Highway. **Alternative B**: Under this alternative, public access would benefit by widening the access road, providing an ADA-compliant restroom, improving the boat ramp and providing an off-site parking area for commercial operators on the south side of Sterling Highway. However, these minor improvements would likely be short-term as visitation increases. Short-term delays or closures may occur during construction; implementation of public notification (e.g., signage, notification of Refuge website, etc.) would reduce these impacts; however, this may still result in temporary negatively impact to recreation. This alternative would not improve unsafe conditions of the boat ramp and parking areas. **Selected Alternative**: Under this alternative, negative impacts would be similar to Alternative B. Beneficial impacts include the following. Public access to Jims' Landing would improve by widening the access road, improving vehicle circulation, increasing vehicle and trailer capacity, providing an off-site parking area, and providing ADA-compliant parking and restroom. Alternative C would result in beneficial impacts to Public Access by improving safety and ease of use for retrieving and launching boats. In addition, the boat ramp would be modified to accommodate users of all skill levels by

VISITOR USE AND EXPERIENCE	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	changing the ramp conditions (e.g., reducing flow velocities and adding more space for boats).

Table 4-3 Affected Cultural Resources and Anticipated Impacts of the Proposed Action and Any Alternatives

CULTURAL RESOURCES	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
There are two Alaska Heritage Resources Survey (AHRS) sites reported within project area consisting of the Sqilantnu Archaeological District (KEN-00156) and the newly documented KEN-00719 site. A portion of the project area is within the boundaries of the Squilantnu Archaeological District (KEN-156) and was determined to be eligible for inclusion on the National Register of Historic Places (Register).	Section 106 consultation was initiated and completed in March 2021. AK SHPO concurred with the USFWS finding of *No Historic Properties Adversely Affected*, 3130-1R FWS 2021-00201 (Ortiz 2021). **Alternative A:** Under the No Action Alternative, there would be no disturbance impact to cultural resources. **Alternative B**: No degradation or destruction of significant archaeological resources would be permitted under the alternative. There is potential for inadvertent discovery of cultural materials during construction. This impact would be reduced to insignificant with the implementation of work stoppage and immediate initiation of consultation with the Alaska Office of History and Archaeology (OHA) upon discovery. The USFWS would monitor the area during construction when earth-disturbing activities occur. Any cultural resources identified during pre-construction surveys would be dealt with in the manner prescribed in the Kenai National Wildlife Refuge Guide for Managing Cultural Resources (1996). **Selected Alternative**: Under this alternative, disturbance impacts would be similar to Alternative B.

Table 4-4 Affected Refuge Management and Operations and Anticipated Impacts of the Proposed Action and Any Alternative

REFUGE MANAGEMENT & OPERATIONS	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
Recreation Jims' Landing is a day use recreation area that is primarily used for sport fishing and scenic river floats. Facility includes a double vault restroom and a boat ramp.	**Alternative A**: Under the No Action Alternative, there would be no changes to recreation disturbance impacts. Overcrowding of the boat ramp and parking facilities, difficult and unsafe boat launch and landing, indirect routing, and inefficient and unsafe pedestrian conditions would continue. The No Action Alternative would not meet the purpose and need of the proposed project because the existing conditions would remain and worsen over time as recreation use increases. **Alternative B**: Under this alternative, there would be minimal improvements to the boat ramp. This alternative will not increase parking capacity at Jims' Landing or relieve congestion and safety conditions of the boat ramp. Beneficial impacts include the addition of an off-site parking area that would improve safety for commercial operators, and upgrades to the restroom and addition of ADA parking would bring it into compliance with ADA requirements. Short-term delays or closures may occur during construction; implementation of public notification (e.g., signage, notification on Refuge website, etc.) would reduce these impacts; however, this may still result in temporary negative impacts to recreation. **Selected Alternative:** Under this alternative, impacts would be similar to Alternative B**.** There would be temporary negative impacts to recreation if construction occurs during high use periods and if closures are necessary during construction; however, these would be temporary. This alternative would meet the purpose and need of the project by improving visitor safety, accommodating existing visitor capacity. Beneficial impacts would occur from new roads and parking by alleviating maintenance costs and reducing dispersed use of the area. Signage to alert boaters of the upcoming boat ramp would improve safety conditions of boaters. Short-term delays or closures may occur during construction; implementation of public notification (e.g., signage, notification on Refuge website, etc.) would reduce these impacts however they may still

REFUGE MANAGEMENT & OPERATIONS	
AFFECTED RESOURCE	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
	negatively impact recreation. Overall, this alternative would increase recreation experience and meet the project's purpose and need. Measures to minimize impacts would include public notification, signage and use of other Refuge media such as the Facebook page and Refuge website.
Administration Biologists treat invasive species within Jims' Landing annually. Law enforcement officers perform year-round rescues for boaters who miss the take out at Jims' Landing, and park rangers monitor take out and launches in an effort to reduce congestion. Maintenance staff maintains the site throughout the year. After high water events, there is an increased need for maintenance.	**Alternative A**: All administrative efforts would continue. Therefore, there would be no impact to administration. **Alternative B**: Estimated construction cost to implement this alternative is approximately $1,001,000.00. Administrative efforts would continue; however, while some invasive species would be reduced in the short term the likelihood for long term invasive species dispersal may increase as would Biologists' efforts control invasive species. **Selected Alternative:** Estimated construction cost to implement this alternative would exceed $2,103,000. Law enforcement and park ranger efforts may decrease, although standard patrol would continue. Invasive species impacts would be similar to Alternative B. The Refuge anticipates a decrease in maintenance needs, with the exception of the boat ramp basin that may require maintenance every few years. The estimated construction cost for Off-site Parking Option 1 is $468,000.00. The estimated construction cost for Off-site Parking Option 2 is $557,200.00.

Table 4-5 Affected Socioeconomics and Anticipated Impacts of the Proposed Action and Any Alternatives

SOCIOECONOMICS	
AFFECTED ENVIRONMENT	**ANTICIPATED DIRECT AND INDIRECT IMPACTS**
Based on 2011 figures, the total expenditure from visitors was $83.7 million with non-residents accounting for $69.3 million or 83 percent of total	**Alternative A:** Under the No Action Alternative, recreational opportunities would continue to contribute to local and regional economies. **Alternative B**: Under this alternative, recreational opportunities would continue to support the community's

expenditures. Expenditures on hunting activities accounted for two percent of all expenditures, followed by non-consumptive activities and fishing at 35 percent and 64 percent respectively (Caudill and Carver 2013).]	economic goals. This alternative would not reduce crowding and congestion or traffic flow. The design and installation of the proposed boat ramp would be beneficial to the facility for sport fishing and scenic floats. Overcrowding likely would occur during the peak season and when salmon runs are particularly strong. The net effect of this alternative on the social environment of Jims' Landing is expected to be slightly improved. This alternative does not meet the purpose and need of the project. **Selected Alternative**: Under this alternative, recreational opportunities would continue to support the community's economic goals. The design and installation of the proposed facilities would potentially reduce social conflicts under this alternative. Crowding and congestion would be relieved and traffic circulation improved. It is possible that some crowding may still occur during the peak season. The installation of a viewing platform would increase wildlife viewing experience. This alternative would result in a significant improvement in the quality of visitor experiences and the social environment.
ENVIRONMENTAL JUSTICE	
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.	The Service has not identified any potential high and adverse environmental or human health impacts from this proposed action or any of the alternatives. The Service has identified no minority or low-income communities within the impact area. Minority or low-income communities will not be disproportionately affected by any impacts from this proposed action or any of the alternatives.

4.1 Cumulative Impact Analysis:

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7).

Construction for the Federal Highway Administration and the Alaska Department of Transportation and Public Facilities Sterling Highway MP 45 to 60 Project (Sterling Highway

project) began in 2020 and is expected to end in 2025. This project constructs a modern highway that would allow for more consistent highway speeds to serve long-distance travelers and commercial truck traffic. The highway runs east-west through the Kenai Mountains and continues to the City of Homer. The project's starting and stopping points for construction would be the intersection of the existing Sterling Highway with Quartz Creek Road on the east and the intersection with Skilak Lake Road on the west.

The proposed Jims' Landing Improvements project is not anticipated to result in significant incremental adverse impacts of the Sterling River Highway MP 45 to 60 Project. The resources assessed for cumulative impacts are described below (Table 4-6).

Table 4-6 Anticipated Cumulative Impacts of the Proposed Action and Any Alternatives

Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment	**Descriptions of Anticipated Cumulative Impacts**
Wildlife-dependent recreation Use of Jims' Landing is anticipated to increase regardless of the construction of the Sterling Highway project.	The proposed construction of an off-site parking area on the south side of Sterling Highway, on Skilak Lake Road, would contribute to safer conditions for recreational users and commercial guides using Jims' Landing. The Selected Alternative would be consistent with the wildlife-dependent recreation goals of the Refuge. Cumulative impacts of the proposed project, while not significant, would be beneficial to wildlife-dependent recreation.
Climate Change Warming, whether it results from anthropogenic or natural sources, is expected to affect a variety of natural processes and associated resources. However, the complexity of ecological systems means that there is a tremendous amount of uncertainty about the impact climate change will actually have. The localized effects of climate change are still a matter of much debate.	The Refuge and other local organizations and agencies have begun responding to the new vulnerabilities posed by a rapidly warming climate. The Kenai Mountains to Sea partnership has targeted conservation within 20 anadromous stream corridors as a means to sustain long-term connectivity in an otherwise dynamic landscape.

4.2 Mitigation Measures and Conditions

Mitigation measures include:

1. *avoidance of an impact through not taking an action or parts of an action;*
2. *minimizing impacts through limiting the degree or magnitude of an action; or*

3. *rectifying impacts by repairing, rehabilitating, or restoring the affected environment.*

Table 4-7 List of Proposed Best Management Practices and Avoidance, Minimization and Mitigation Measures

Resource	Commitments and Measures
All Resources	Implement all regulatory permit mitigation requirements to avoid significant potential impacts.
Public Access	Communicate construction schedule, traffic, and access notifications to the public in advance using public notices, signage, and Refuge information boards.
	Install and coordinate temporary traffic control devices to minimize the impacts to visitors.
	Avoid construction of the boat ramp during peak use (June-October) and maintain access to the Jims' Landing and boat ramp during construction to the extent practicable.
Recreation	Communicate construction schedule, traffic, and access notifications to the public in advance using public notices, signage, and Refuge information boards.
	Avoid construction of the boat ramp during peak use (June-October) and maintain access to the Jims' Landing and boat ramp during construction to the extent practicable.
Water Resources, Water Quality, and Floodplains	Minimize the contact of construction materials, equipment, and maintenance supplies with stormwater
	Reduce erosion through soil stabilization methods that may include application of USFWS-approved dust palliatives for dust control, installing perimeter silt fences, and placing fiber roll wattles.
	Leave erosion control measures in place until vegetation becomes established and covers more than 70 percent of disturbed area.
	Do not store fuel, fuel vehicles, or perform maintenance within 100 feet of water bodies.
	Stabilize and re-vegetate disturbed areas after work is completed.
	Incorporate measures to protect the water quality.
	The contractor would be required to prepare and implement a SPCC Plan during construction.
	All contaminated material will be handled and disposed of in accordance with ADEC regulations.
Wetlands and Non-wetland Waters	Reduce impacts to wetland and water resources during design to extent practicable. Examples include use of elevated walkways through wetland areas where feasible and use of wetland mats or elevated structures during construction. Light-penetrating materials would be used to reduce impacts to wetlands and waters to the extent practicable.
	Delineate work and staging areas, and clearly mark clearance and fill boundaries to avoid accidental impacts from inadvertent access, equipment operation, clearing of, and fill material placement to wetlands and waters.

	Do not store fuel, fuel vehicles, or perform maintenance within 100 feet of wetlands.
	Contractor will not place fill material or debris from clearing outside of the designated construction zone.
	Contractor will not clear vegetation or run equipment outside the designated clearing zone.
	Clearing will be selective and the minimum width necessary for project construction and operation.
	Install culverts, elevated walkways, drainage mats, or other methods in wetland areas as appropriate to minimize effects on natural drainage patterns and to maintain hydrologic flow.
	Retain native topsoil for future use on site. Native topsoil will be weed-free.
	When clearing areas where revegetation is desired, cut vegetation flush with the ground to allow passive revegetation of disturbed areas.
	Compensatory mitigation is not proposed for this project due to the small impact of 0.3 acres the implementation of best management practices and reduction of wetland impacts during the design process. In addition, approximately 0.01 acres of wetland impacts include beneficial impacts such as the installation of root wads to prevent potential bank erosion and create habitat for fish.
Vegetation and Wildlife	Avoid tree cutting and vegetation clearing during the nesting bird generally May 1 through July 15 but for nesting raptors April 15 and for Strigiformes in March.
	Implement measures to keep all equipment working in project area free of weed seed.
	Prevent introduction and spread of weeds by using appropriate measures during movement of sand, gravel, borrow, and fill material as well as sourcing weed-free materials.
	Delineate work and staging areas, and clearly mark clearing and fill boundaries to avoid accidental and unnecessary impacts from inadvertent access, equipment operation, clearing of, and fill material placement to wildlife, habitat, and vegetation.
	Retain topsoil from undisturbed and weed-free habitats for use on site (e.g., restoring disturbed habitats and maintaining native seed stock). Only weed-free topsoil would be retained and reused.
	Retain tree material for use on site to extent practicable (e.g., mulch, snags, woody debris).
	Clearing minimum width necessary for project construction and safer operation.
	Maintain good housekeeping and implement all BMPs at construction sites (e.g., keep construction areas free of trash, implement SWPPP).
	Delineate vegetation and trees (including root protection zone) to be preserved to avoid accidental clearing or damage to existing vegetation.
	Implement the USFWS Land Clearing Timing Guidance for Alaska.

	Nesting Bird Surveys. Before the start of ground-disturbing activities, the USFWS will conduct visual preconstruction surveys for nesting birds protected by the MBTA, if construction and habitat removal activities are scheduled to occur during the bird breeding season (generally May 1 to July 15; for raptors beginning April 15 and for Strigiformes March). In the event active bird nests are encountered during the pre-construction survey, the biologist in conjunction with the USFWS will establish nest avoidance buffer zones as appropriate. The buffer distances will be consistent with the intent of the MBTA. The USFWS will delineate nest avoidance buffers established for ground-nesting birds in a manner that does not create predatory bird perch points in close proximity (150 feet) to the active nest site. The USFWS will periodically monitor active bird nests. The USFWS will maintain the nest avoidance buffer zone until nestlings have fledged and are no longer reliant on the nest or parental care for survival or the nest is abandoned (as determined by the USFWS). Nest surveys will be repeated for work stoppages over 14 days. Equipment, supplies, and vehicles will also be surveyed for nests.
	The USFWS will inspect construction materials or other materials that may provide shelter for wildlife prior to the start of construction daily. If wildlife are found during these checks, the USFWS would implement appropriate measures to move wildlife.
	Bald Eagles. The USFWS has developed guidelines for avoiding disturbance of bald eagles at nest sites, including the recommendation of 330-foot primary and 660-foot secondary buffer zones between bald eagle nests and disturbance activities such as motorized traffic and standard road construction (USFWS 2007a). A buffer of 0.5 mile (2,640 feet) is recommended for blasting and the generation of other loud intermittent noises (USFWS 2007a). For all activities, the actual size of the buffer zone needed could vary depending on the individual eagle's tolerance for human disturbance as well as whether the activity will be visible from the nest. A bald eagle nest monitor would observe an active nest to determine if the occupants are disturbed by construction activities. The monitor will report observations of disturbance to the appropriate Service supervisor. Nesting season is generally March 1 to August 31.
Social and Economic Changes	Continue ongoing coordination and outreach with interested stakeholders using multimedia platforms (e.g., newspapers, radio, websites and virtual meetings).
	Communicate construction schedule, traffic, and access notifications to the public in advance using public notices, signage, and Refuge information boards.
Soils and Geology	Design and implement erosion and sediment control measures prior to beginning construction. Maintain these erosion and sediment control measures throughout the entire construction phase, regardless of season, until vegetation is established. These could include slope protection, erosion, surface water drainage, sediment containment, covering stockpiled materials and construction hauling techniques.

	Retain and stockpile topsoil for later use on site (e.g., to enhance revegetation success). Only weed-free topsoil will be retained for later use.
	Local native plants would be used to improve the revegetation rate.
	The project would reuse existing road base material to the extent practicable.
Cultural Resources	Should unidentified archaeological resources or human remains be discovered during the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4) in consultation with AK State Historic Preservation Office (SHPO), and pending further recommendation from USFWS in consultation with the Alaska OHA. Please note that some sites can be deeply buried and that fossils are considered cultural resources subject to the Alaska Historic Preservation Act and the Paleontological Resources Protection Act.
	All known cultural resources will be avoided by project activities during implementation.
Air Quality, Noise, and Energy	All equipment would have sound control devices no less effective than those provided on the original equipment. All equipment would have muffled exhaust.
	All equipment would comply with pertinent noise standards of the EPA.
	Use of plant-based, organic tackifiers or water to control dust during construction, in the clearing of land and road grading and on unpaved roads, material stockpiles, and other surfaces which can create airborne dusts.
	Fully or partially enclose material stockpiles in cases where application of tackifiers is not sufficient to prevent particulate matter from becoming airborne.
	Cover open-bodied trucks transporting materials that could become airborne when in motion.
	Promptly remove materials that have the potential to become airborne.
	Operate all equipment in accordance with manufacturer's recommendations to minimize emissions.
	Shut down idling heavy equipment when not in use.
Visual Quality	Reseed or replant disturbed areas with local native vegetation to the extent practicable.

4.2.1 Monitoring

The Refuge would continue to implement standard monitoring measures. These include inspecting and ensuring best management practices and impact avoidance and minimization requirements are implemented during construction.

4.2.2 Waters and Wetland Avoidance and Mitigation Measures

Avoidance

- Reduce impacts to wetland and water resources during design to the extent practicable.

- Delineate work and staging areas, and clearly mark clearance and fill boundaries to avoid accidental impacts from inadvertent access, equipment operation, and fill material placement to wetlands and waters.
- No fill material or debris from clearing would be placed outside of the designated construction zone.
- The contractor may not clear vegetation or run equipment outside the designated clearing zone.

Minimization

- Implement all BMPs and conditions identified in permits.
- Where possible, the embankment will incorporate areas previously impacted by fill placement.
- Clearing will be selective and the minimum width necessary for project construction and safe operation.
- Not grubbing wetlands outside the project footprint.
- Using steeper (3:1) road embankment slopes adjacent to wetlands to minimize the footprint width while providing long-term stability. The steeper slopes are anticipated to deter off-road vehicle users from leaving the roadway.
- Installing culverts or elevated walkways in wetland areas as appropriate to minimize road effects on natural drainage patterns and to restore hydrologic flow.
- Retain native weed-free topsoil and vegetation mat (if feasible) for future use, such as returning degraded impacted habitat to pre-existing conditions. Only weed-free soils will be used.
- Allow for passive revegetation by allowing a disturbed area to revegetate naturally.
- Gravel used in temporary construction footprints will be removed and elevated walkways will reduce impacts to wetlands.
- Temporary project impacts will be restored to previous condition to the extent practicable.

The following measures to avoid, minimize, and mitigate impacts to water resources, water quality, and floodplains include:

- Minimize the contact of construction materials, equipment, and maintenance supplies with stormwater;
- Reduce erosion through soil stabilization methods that may include but not limited to watering for dust control, installing perimeter silt fences, and placing fiber rolls;
- Maintain water quality using methods that may include using grass buffer strips, organic mulch layers, planting soil beds, and vegetated systems such as swales and grass filter strips that are designed to convey and treat runoff;
- Leave erosion control measures in place until vegetation becomes established;
- Do not store fuel, fuel vehicles, or perform maintenance within 100 feet of water bodies;
- Stabilize and re-vegetate disturbed areas after work is completed;
- Incorporate measures to protect the water quality, and
- Implement all regulatory permit mitigation requirements to avoid significant potential impacts.

Restoration

Previously disturbed areas that will not be used will be restored with topsoil and native, weed-free seed mix.

Mitigation

Compensatory mitigation is not proposed for this project because the project purpose is to improve safety at a public facility and to avoid impacts to water quality from seasonal flooding and habitat loss due to bank erosion. Proposed BMPs will prevent negative impacts to water quality, water resources and wetlands during construction to the maximum extent practicable.

A wetland delineation was conducted for this project and is available as a separate document.

4.3 Summary of Analysis

The purpose of this EA is to briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

4.3.1 Alternative A – No Action Alternative

As described above, the No Action Alternative would not meet the purpose and need of the project. Existing conditions would remain and likely deteriorate as recreational use of Jims' Landing continues to exceed its capacity. Recreation experience would also continue to diminish due to the congestion at the boat ramp and lack of safer boat usage of the landing. The following existing conditions would continue to impact safety, recreation and public use of the Jims' Landing Facility:

- Congestion at the boat ramp and in the parking area because the ramp and parking would not be improved to recreation use
- High river velocities would continue to make boat launch and landings difficult
- Parking capacity for the public would continue to contribute to congestion of the boat ramp because the parking areas would not be increased or delineated for trailers or passenger vehicles.
- Inadequate access and safety concerns for commercial operators crossing Sterling Highway because a new parking area would not be constructed on the south side of the highway.

In addition, bank erosion and loss of Kenai River fish habitat would continue and worsen without the addition of root wads to control erosion. Beneficial impacts of the alternative would include no loss of wetland habitat and no loss of trees and other vegetation.

4.3.2 Alternative B – Refine Existing Conditions and Provide Off-Site Parking

Alternative B would not meet the purpose and need of the project. Existing conditions would remain and likely deteriorate as recreational use of Jims' Landing continues to exceed its capacity. Recreation experience would also continue to diminish due to the congestion at the boat ramp and lack of safer boat usage of the landing. The following existing conditions would continue to impact safety, recreation and public use of the Jims' Landing facility:

- congestion at the boat ramp and in the parking area

- high river velocities making boat launch and landings difficult
- lack of parking capacity for the public

In addition, bank erosion and loss of Kenai River fish habitat would continue and worsen without the addition of bank erosion installation to control erosion. Beneficial impacts of the alternative would include minimal loss of wetland habitat and fewer impacts to native trees and soils and the addition of an off-site parking area for commercial operators on the south side of Sterling Highway, on Skilak Lake Road.

4.3.3 Selected Alternative - Alternative C with Off-site Parking Option 1

As described above, the Selected Alternative and Off-site Parking Option 1 would have negative impacts to wildlife, special status species, wetlands, vegetation, trees and habitat, floodplains, and recreation. The majority of negative impacts to biological and natural resources are due to the loss of habitat and disturbance from construction and operations. However, these impacts, together with best management practices and avoidance, minimization, and mitigation measures, would be insignificant. Measures include but are not limited to bald eagle and avian nest surveys and monitoring if construction occurs during eagle breeding season and nesting birds are found. In addition, the habitat loss area is insignificant compared to vast resources available both within the WRA and the Refuge. The footprint of the proposed alternative is less than one percent of land in the WRA.

The Selected Alternative would meet the purpose and need of the project by enhancing recreation experience for sport fishing, scenic floats, and wildlife viewing by providing safer boat ramp conditions for launches and retrievals, and alleviating congestion in parking and staging areas by providing greater capacity for trailers and staging areas. The project would also protect natural resources of Jims' Landing by implementing BMPs and other measures to avoid, minimize, and mitigate impacts to wetland and riparian habitats. In addition, the Service would comply with all permit requirements.

5 List of Sources, Agencies and Persons Consulted

State Coordination

The USFWS partnered with the ADF&G Division of Sport Fish for the proposed action. USFWS has coordinated with Alaska DNR Parks and Outdoor Recreation throughout the alternative development process. Coordination with ADF&G and DNR was continued throughout the NEPA process. State agencies were contacted by the USFWS prior to the formal NEPA scoping for the Jims' Landing Project (Appendix 5) in December 2020.

The USFWS and ADF&G met on-site on September 24, 2020. Design and development meetings were held on October 16, 2020 (USFWS and ADF&G), January 11, 2021 (USFWS, ADF&G, ADNR), and April 1, 2021 (USFWS, ADF&G, ADNR). A meeting to discuss hydraulic technical information and the boat ramp was held on February 25, 2021 (USFWS, ADF&G, ADNR).

The USFWS initiated National Historic Preservation Act Section 106 review with the Alaska SHPO on March 23 and March 25, 2021. On March 31, 2021, SHPO issued its concurrence with the finding of No Historic Properties Adversely Affected.

The USFWS, ADF&G, and ADNR met on July 1, 2021 to discuss comments, alternatives, and modifications to the preferred alternative. The USFWS and the USACE met on July 7, 2021 to discuss the preferred alternative, wetland delineation, and the CWA Section 404 permit. A pre-application meeting to discuss the KPB Habitat, ADNR Parks, and ADF&G Title 16 Fish Habitat permits was held on July 12, 2021 and included the USFWS, ADF&G, ADNR, and KPB.

Tribal Consultation

Alaska Native Claims Settlement Act (ANCSA) Corporation and Tribal Leaders were invited by the USFWS to comment on or participate in the pre-NEPA scoping for the Jims' Landing Project (Appendix 6). The opportunity for these tribes or tribal organizations to comment on or participate in formal or informal consultation for this project remains open throughout the planning processes for this project.

Public Outreach

Public involvement began in 2020 with a virtual public scoping meeting prior to the development of this EA. The goal of the scoping meeting was to solicit early feedback from the public regarding the Jims' Landing Improvement project. A project website was available with materials presented during the scoping meeting including a review of preliminary design options, summary of public comments, question and answer instructions and additional information regarding comment procedures. The project website continues to be available and can be accessed at the following link: https://usfws-jims.blogspot.com/.

List of Sources, Agencies, and Persons Consulted

Alaska Department of Environmental Conservation, Earl Crapps, Section Manager.
Alaska Department of Fish & Game, Brian Blossom, Kenai Peninsula Area Manager; Tony Munter, Habitat Division.
Alaska Department of Natural Resources, Pam Russell, Natural Resource Specialist.
Alaska Department of Transportation & Public Facilities, James Amundsen, PE; Joselyn Biloon, Area Planner; Sean Holland Sterling Highway Project, Project Manager; Brian Elliot, Regional Environmental Manager.
Environmental Protection Agency, Molly Vaughn, Region 10.
Federal Highway Administration, Andrew Rasmussen, Western Federal Lands.
Kenai Peninsula Borough, Nancy Carver, Resource Planner; Samantha Lopez, Floodplain Administrator; Morgan Aldridge, Planning.
Alaska State Historic Preservation Office/Office of History and Archaeology, Liz Ortiz, Archaeologist II Review and Compliance.
United States Army Corps of Engineers, Andrew Gray, Project Manager; Benjamin Soiseth, Section Chief.
United States Department of Agriculture – Forest Services, Francisco Sanchez, Seward Ranger District.

List of Preparers

Personnel from the Kenai National Wildlife Refuge and USFWS were involved with the preparation of this EA.
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Steve Miller, Deputy Refuge Manager, Project Leader

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Jeremy Karchut, Regional Archaeologist/Regional Historic Preservation Officer
Rita Miraglia, Archaeologist

Personnel from the Alaska Department of Fish and Game, Sport Fish Division, were involved with preparation of this EA.
Paul Cyr, Statewide Boating Access Program Coordinator
Jacob Cunha, Habitat Biologist

Personnel from PND Engineers, Inc. were involved with the preparation of this EA.
Alexandra West Jefferies, Project Manager
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6 References

ADF&G. USFWS. 1982. Master Memorandum of Understanding Between The Alaska Department of Fish and Game Juneau, Alaska and The U.S. Fish and Wildlife Service, Department of the Interior Anchorage, Alaska.

AlaskaRain. 2019. Triumph, tragedy and moving on: the Life Cycle of a Nest. Accessed online at https://www.facebook.com/AlaskaRainArts/photos/?tab=album&album_id=957921771079543 on March 15, 2021.

Caudill, James and Erin Carver. 2013. Banking on Nature: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation. U.S. Fish and Wildlife Service, Falls Church, Virginia.

Cowardin, Lewis M. Carter, Virginia. Golet, Francis. LaRoe, Edward. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Prepared for the USDOI, USFWS. FWS/OBS-79/31.

Davis, A., D. Rak, D. Davidson, and R. Huecker. 1980. Soil Resource Inventory of the Kenai Peninsula: Chugach National Forest, Alaska. Report Number 110. U.S. Forest Service, Alaska Region: Anchorage, Alaska.

Federal Highway Administration and Alaska Department of Transportation & Public Facilities. 2018. Sterling Highway MP 45-60 Project Final EIS.

Flagstad, L., M. A. Steer, T. Boucher, M. Aisu, and P. Lema. 2018. Wetlands across Alaska: Statewide wetland map and assessment of rare wetland ecosystems. Alaska Natural Heritage Program, Alaska Center for Conservation Science, University of Alaska Anchorage. 151 pages.

Giefer, J., and B. Blossom. 2020. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southcentral Region, effective June 1, 2020. Alaska Department of Fish and Game, Special Publication No. 20-03, Anchorage. Accessed online in January 2021 at http://www.adfg.alaska.gov/FedAidPDFs/SP20-03.pdf.

GoogleEarth. 2021. StreetView. Imagery September 2016.

HDR, Inc. 2010. Preliminary Jurisdictional Determination. Prepared for the Alaska Department of Transportation and Public Facilities, Sterling Highway MP 45–60 Project: Anchorage, Alaska.

_____. 2006. Biological Evaluation for Plants. Prepared for the Alaska Department of Transportation and Public Facilities, Sterling Highway MP 45–60 Project: Anchorage, Alaska: Anchorage, Alaska.

_____. 2003. Supplemental Draft Environmental Impact Statement Alternatives Evaluation: Evaluation Criteria and Alternatives Analysis. Prepared for DOT&PF, Sterling Highway MP 45–60 Project: Anchorage, Alaska.

Ortiz, L. 2021. Jim's Landing reply to 3130-1R FWS 2021-00201. [email]

PND Engineers, 2021a. Jims' Landing Boat Launch Access and Parking Improvements, Refuge, Hydraulic Report.

_____. 2021b. Jims' Landing and Boat Launch Improvements Vegetation and Wetland Resources Study

SRB&A. 2020. Cultural Resources Literature Review and Field Survey Report for Jim's Landing Boat Launch Access and Parking Improvements. Prepared for the USFWS Kenai National Wildlife Refuge.

U.S. Census Bureau. 2020a. Accessed online accessed on Nov 10, 2020 at https://www.census.gov/search-results.html?searchType=web&cssp=SERP&q=Kenai%20Peninsula%20Borough,%20AK

_____. 2020b. Accessed online on November 6, 2020 at https://worldpopulationreview.com/us-cities/cooper-landing-ak-population. _____.

U.S. Fish and Wildlife Service. 2021. Headwaters Economics. Socioeconomics Profiles. Accessed online in April 2021 at US Fish and Wildlife Service Socioeconomic Indicators - Headwaters Economics.

_____.2021a. Bald Eagle Natural History and Sensitivity to Human Activity. Accessed online on August 4, 2021 at https://www.fws.gov/alaska/pages/migratory-birds/eagles-other-raptors/bald-eagle-nesting-sensitivity-human-activity.

_____.2010. Kenai National Wildlife Refuge Comprehensive Conservation Plan. Accessed online in January 2021 at https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/USFWS_2010_Kenai_CCP.pdf

_____. 2007. Skilak Recreation Area Revised Management Plan. Accessed online in January 2021 at https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/skilak_revised.pdf.

_____. 2007a. National Bald Eagle Management Guidelines. Accessed online at https://www.fws.gov/pacific/ecoservices/documents/NationalBaldEagleManagementGuidelines.pdf on March 15, 2021.

_____. 1993. The Design Strategy for Proposed Public Use Facilities in the Skilak Wildlife Recreation Area.

_____.1985. Kenai National Wildlife Refuge Final Comprehensive Conservation Plan. Soldotna, Alaska.

Washington Department of Transportation (WSDOT). 2020. Biological Assessment Manual. Chapter 7. Construction Noise Impact Assessment. Accessed online in December 2020 at https://wsdot.wa.gov/sites/default/files/2018/01/18/Env-FW-BA_ManualCH07.pdf.

Western Regional Climate Center (WRCC). 2020. Period of Record Monthly Climate Summary for Coper Landing 5 W, Alaska (502149). Accessed online in December 2020 at https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ak2149.

7 Determination:

This section will be filled out upon completion of any public comment period and at the time of finalization of the Environmental Assessment.

☒ The Service's action will not result in a significant impact on the quality of the human environment. See the attached **"Finding of No Significant Impact".**

☐ The Service's action **may significantly affect** the quality of the human environment and the Service will prepare an Environmental Impact Statement.

Preparer Signature: Anna Kopitov Anna Kopitov Digitally signed by Anna Kopitov Date: 2021.10.01 12:51:32 -07'00' Date: October 1, 2021

Name/Title/Organization: Anna Kopitov, Senior Ecologist/Regulatory Specialist, PND Engineers

Reviewer Signature: ANDRE LORANGER Digitally signed by ANDRE LORANGER Date: 2021.10.05 13:26:49 -08'00' Date: 10/5/2021

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Appendices

Appendix 1 Other Applicable Statutes, Executive Orders & Regulations

Appendix 2 Vegetation and Wetland Resource Study

Appendix 3 Wildlife Resource Study

Appendix 4 Visual Resources (Scenery) Report

Appendix 5 Agency Notification Letters and Comments

Appendix 6 Tribal Coordination and Notification Letters

Appendix 7 Public Comments and Responses

Appendix 8 ANILCA Title VIII, Section 810

Appendix 1 Other Applicable Statutes, Executive Orders, and Regulations

OTHER APPLICABLE STATUTES, EXECUTIVE ORDERS & REGULATIONS

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS Underlined text depicts relevant statutes, executive orders and regulations.	
National Environmental Policy Act. Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (43 CFR 46; 516 DM 8) and U.S. Fish and Wildlife Service (550 FW 3)	This EA has been prepared in accordance with NEPA, as implemented by the CEQ and USFWS regulations.
Cultural Resources American Indian Religious Freedom Act, as amended, 42 U.S.C. 1996 – 1996a; 43 CFR Part 7 Antiquities Act of 1906, 16 U.S.C. 431-433; 43 CFR Part 3 Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa – 470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7 National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470-470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810 Paleontological Resources Protection Act, 16 U.S.C. 470aaa – 470aaa-11 Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001-3013; 43 CFR Part 10 Executive Order 11593 – Protection and Enhancement of the Cultural Environment, 36 Fed. Reg. 8921 (1971)	The USFWS initiated and completed National Historic Preservation Act Section 106 review with the Alaska SHPO in March 2021. This process includes consultation with SHPO/Tribal Historic Preservation Officers (THPO), Indian Tribes. SHPO issued its concurrence with the finding of No Historic Properties Adversely Affected.

Executive Order 13007 – Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)	
Fish & Wildlife Alaska National Interest Lands Conservation Act (ANILCA) of 1980 on December 2, 1980. Public Law 96-487, 94 Stat. 2371. Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. 668-668c, 50 CFR 22 Endangered Species Act of 1973, as amended, 16 U.S.C. 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450 Fish and Wildlife Act of 1956, 16 U.S.C. 742 a-m Lacey Act, as amended, 16 U.S.C. 3371 et seq.; 15 CFR Parts 10, 11, 12, 14, 300, and 904 Migratory Bird Treaty Act, as amended, 16 U.S.C. 703-712; 50 CFR Parts 10, 12, 20, and 21 Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)	ANILCA, Title VIII, Section 810 of requires Federal agencies having jurisdiction over lands in Alaska to evaluate the potential impacts of proposed actions on subsistence uses and needs. This document will be completed and included as an appendix in the Final EA. Mitigation measures have been put in place to reduce impacts to nesting bald eagles using the refuge under all alternatives pursuant to Bald and Golden Eagle Protection Act. No known federally-listed Threatened or Endangered species occur on the Refuge. The Service has therefore determined that the Jims' Landing Improvements project will have "no effect" on species listed under the Endangered Species Act or designated critical habitat, and finds the project to be fully consistent with Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq: 87 stat 884, as amended). Mitigation measures have been put in place to reduce impacts to migratory birds using the refuge under all alternatives in compliance with the MBTA.
Natural Resources Clean Air Act, as amended, 42 U.S.C. 7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23 Wilderness Act, 16 U.S.C. 1131 et seq. Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq.	

Executive Order 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)	
Water Resources Coastal Zone Management Act of 1972, 16 U.S.C. 1451 et seq.; 15 CFR Parts 923, 930, 933 Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. 1251 et seq.; 33 CFR Parts 320-330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328 Rivers and Harbors Act of 1899, as amended, 33 U.S.C. 401 et seq.; 33 CFR Parts 114, 115, 116, 321, 322, and 333 Safe Drinking Water Act of 1974, 42 U.S.C. 300f et seq.; 40 CFR Parts 141-148 Executive Order 11988 – Floodplain Management, 42 Fed. Reg. 26951 (1977) Executive Order 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977)	The USFWS will apply for all applicable water resources permits and implement all applicable permit requirements. Alternatives B and C would require a CWA Section 404 and Rivers and Harbors Act Section 10 permit from USACE. As more than one acre of land, a Construction General Permit under the National Pollutant Discharge Elimination System would be required. Section 401 Water Quality Certification would be acquired through the implementing State agency. In compliance with EO 11988, Floodplain Management, much of the project area is within the 100-year floodplain. If impacts cannot be avoided, minimization measures to restore and preserve the floodplain will be designed and implemented In compliance with EO 11990, Alternatives B and C would unavoidably result in fill material in jurisdictional, tidal wetlands associated with Kenai River and Jean Creek. The final design will incorporate measures to avoid impacts to wetland and riparian habitats. The Service will obtain all required permits pursuant to Section 404 of the Clean Water Act and implement all necessary mitigations, so there would be no net loss of wetlands pursuant Executive Order 11990. The Service will also implement measures to minimize short-term disturbance of wetlands during construction.

State and Local Laws Applicable to the Proposed Action

The Service will apply for the following applicable State and local permits as part of the NEPA process.

Alaska Department of Environmental Quality (ADEC)

ADEC is the and implementing agency for regulates pollution discharge and implementation of State administration of discharge permits, including CWA Section 401: Water Quality Certification and CWA Section 402: National Pollution Discharge Elimination System. Applicable statutes include Wastewater Treatment and Disposal 18 AAC 72

Alaska Department of Fish & Game

Alaska Statute Title 16

Anadromous Fish Act (AS 16.05.871-.901): Regulates actions that alter or affect "the natural flow or bed" of a specified waterbody, or fish stream.

Fishway (AS 16.05.841): Requires individual or agency to notify and obtain authorization for ADF&G, Habitat Section for activities within or across a stream used by fish if it is determined such uses could represent an impediment to efficient passage of resident or anadromous fish.

Alaska Department of Natural Resources

11 AAC 96.010 Leases, Easements for use of State submerged lands.

11 AAC 96.014(b)(15) Permit for disturbance involving vegetation clearing in Kenai River Special Management Area

Alaska Department of Transportation and Public Facilities

AAC Title 17 Right of Way: Consideration of potential impacts to transportation projects within Alaska, land access within ROW

Kenai Peninsula Borough

Anadromous Water Habitat Protection: Protect and preserve the stability of anadromous fish; Provide a guide for growth and development along anadromous waters in accordance with the Kenai Peninsula Borough Comprehensive Plan

Right of Way: New road construction, road improvements and road maintenance (KPB Policy Statement No. 2004-01)

Appendix 2 Vegetation and Wetland Resource Study

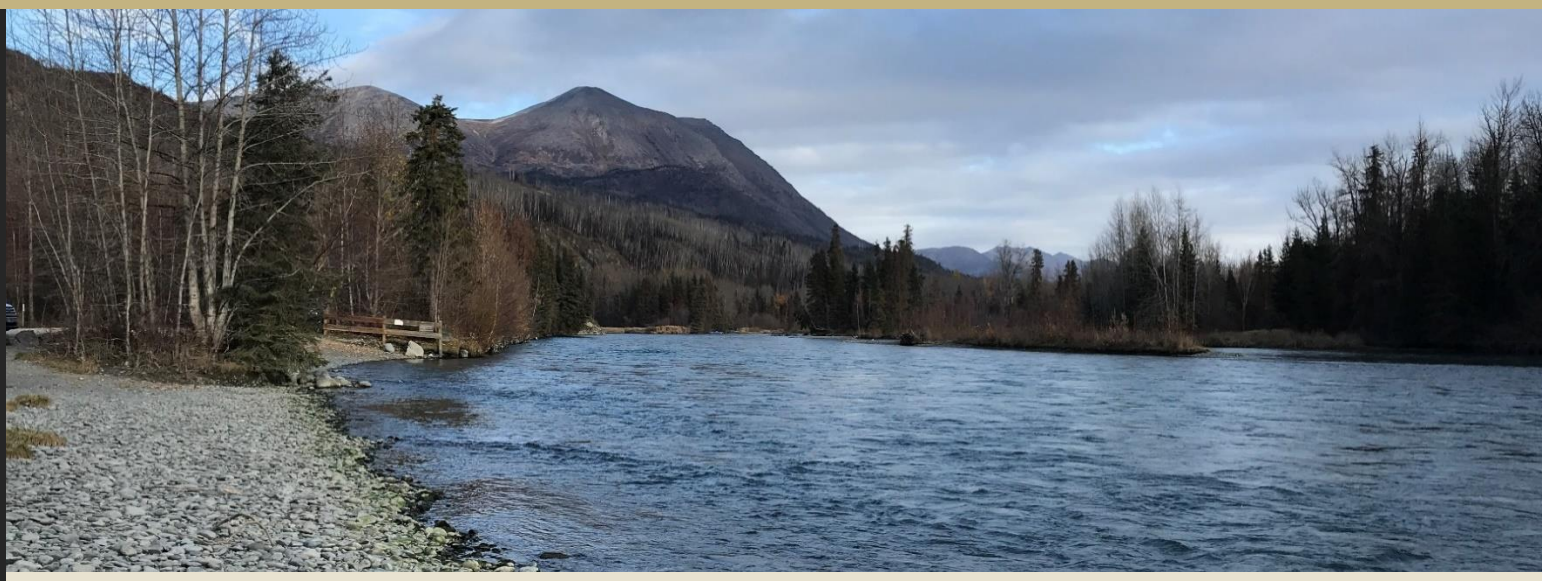
January 2021

Prepared for:
U.S. Fish & Wildlife Service
1011 E. Tudor Road
Anchorage, AK 99503

JIMS' LANDING BOAT LAUNCH ACCESS AND PARKING IMPROVEMENTS

Kenai National Wildlife Refuge

Vegetation and Wetland Resources Study, Rev.1



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PND ENGINEERS, INC.

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Acronyms and Abbreviations

AAC	Alaska Administrative Code
ADF&G	Alaska Department of Fish & Game
AKDOT&PF	Alaska Department of Transportation & Public Facilities
AKEPIC	Alaska Exotic Plants Information Clearinghouse
AOI	area of interest
CNF	Chugach National Forest
CWA	Clean Water Act
CWPP	Sterling Community Wildfire Protection Plan
EA	Environmental Assessment
EPA	Environmental Protection Agency
FHWA	Federal Highways Administration
GIS	Geographic Information System
KNWR	Kenai National Wildlife Refuge
KPB	Kenai Peninsula Borough
KPCWMA	Kenai Peninsula Cooperative Weed Management Area
KRCMP	Kenai River Comprehensive Management Plan
NEPA	National Environmental Policy Act
NWI	National Wetlands Inventory
Refuge	Kenai National Wildlife Refuge
Service	United States Fish & Wildlife Service
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
UKRCP	Upper Kenai River Cooperative Plan
WOTUS	waters of the U.S.

Vegetation and Wetlands Resources Study for Jims' Landing Boat Launch Access and Parking Improvements

January 2021

1 Introduction

Jims' Landing Boat Launch is a facility within the Skilak Wildlife Recreation Area, which is a component of the larger Kenai National Wildlife Refuge (Refuge or KNWR). The U.S. Fish and Wildlife Service (Service or USFWS) has identified a need for improvements to the boat launch and associated parking areas in order to address public access and public safety deficiencies.

This report identifies wetlands, vegetation, and habitats anticipated within the vicinity (Figure 1-1) and the primary regulatory framework relevant to these resources. The accompanying Wildlife Resources Study provides additional detail about anticipated fish and wildlife communities.

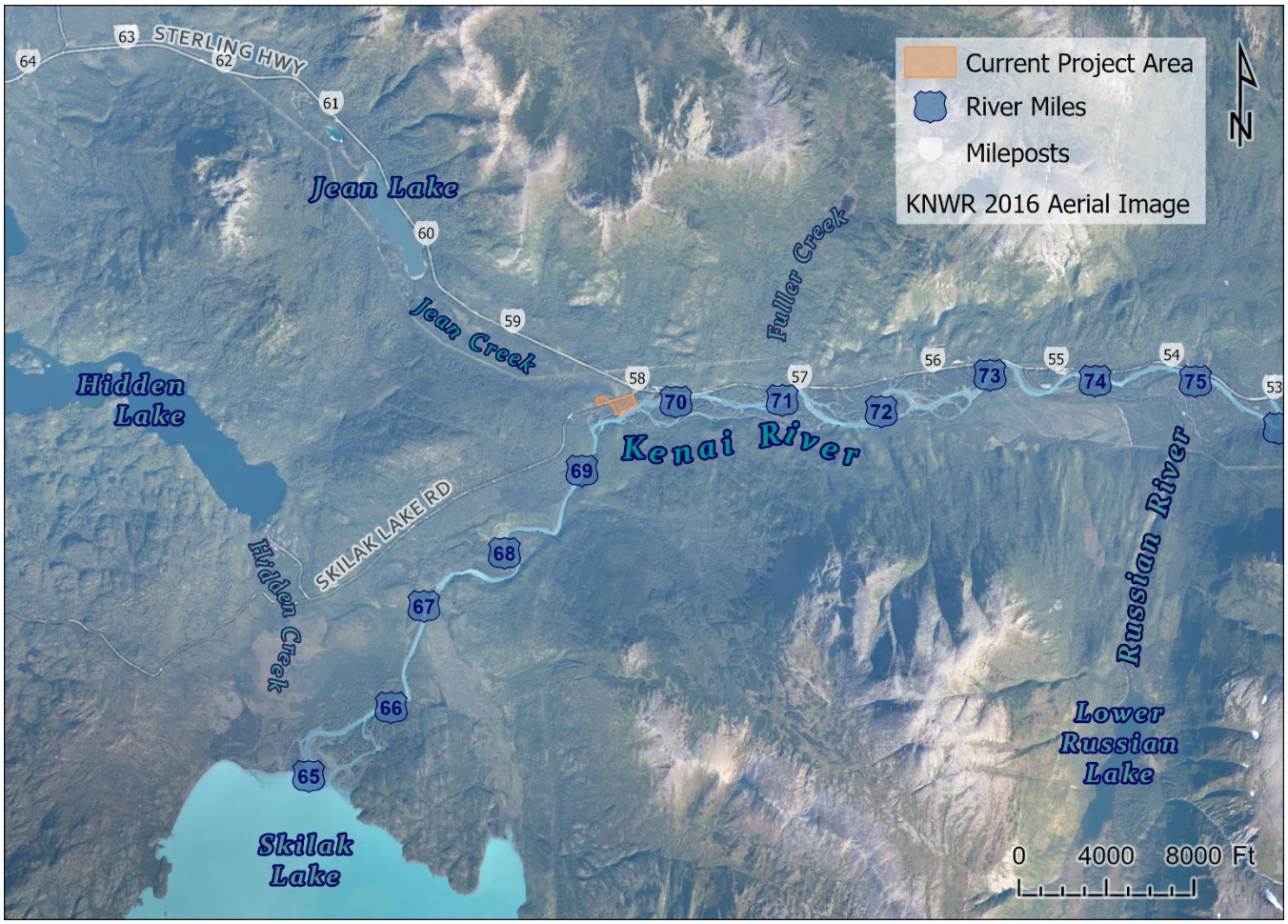

Figure 1-1 Overview map of project area vicinity showing river and highway mile markers (KPB 2020a)

2 Methods

Previous studies, reports, and mapping data for the project area and vicinity were collected and reviewed. For vegetation and wetlands spatial analysis, available aerial imagery and spatial datasets were overlaid using geographic information system (GIS) software. Significant resources were available from the *Sterling Highway Milepost 45 to 60 Project* (Sterling Highway Project), some of which overlapped approximately one third of the project area. Additionally, a wetland delineation was performed by Farmer Surveying, LLC for Bratslavsky Consulting Engineers in 2018.

3 Vegetation

Multiple vegetation and wetland mapping efforts were conducted for the Sterling Highway Project, resulting in a detailed depiction of the typical vegetation communities in the vicinity. Some of the later mapping efforts (after project impact areas were extended) overlap the Jims' Landing Boat Launch. In 2005, a desktop study was conducted for the Sterling Highway Project relying on detailed vegetation mapping of the Chugach National Forest (CNF), vegetation delineated during the project's wetlands mapping, aerial imagery, and existing spatial datasets. (FHWA & AKDOT&PF 2018; HDR Alaska 2006; 2010a; 2010b; Sivils 2005). *Tsuga heterophylla* is included in the Sterling Highway Project documentation, but not anticipated in the project area. Not included in the documentation, but anticipated in the project area are *Salix sitchensis* and *Alnus incana* (pers. com. M. Bowser). Plant communities are described in Section 4; Table 3-1 summarizes dominant plant species in the general vicinity.

TABLE 3-1. DOMINANT PLANT SPECIES IN THE VICINITY (HDR ALASKA 2010A; M. BOWSER)

Scientific Name	Common Name
Alnus viridis ssp. sinuata	Sitka alder
Alnus incana	gray alder
Athyrium filix-femina	lady fern
Betula nana	dwarf birch
Betula kenaica	Kenai birch
Calamagrostis canadensis	bluejoint reedgrass
Carex aquatilis	water sedge
Carex utriculata	beaked sedge
Chamerion angustifolium	fireweed
Cornus canadensis	bunchberry dogwood
Dasiphora fruticosa ssp. floribunda	shrubby cinquefoil
Empetrum nigrum	crowberry, mossberry
Equisetum arvense	field horsetail
Equisetum pratense	meadow horsetail

Scientific Name	Common Name
Equisetum variegatum	northern scouring rush
Eriophorum angustifolium	tall cotton grass
Eriophorum russeolum	Chamisso's cotton grass
Geocaulon lividum	false toadflax
Gymnocarpium dryopteris	western oak fern
Ledum palustre ssp. decumbens	northern Labrador tea
Linnaea borealis	twinflower
Lycopodium annotinum	stiff clubmoss
Myrica gale	sweet gale
Menziesia ferruginea	rusty menziesia
Populus balsamifera	black cottonwood
Populus tremuloides	quaking aspen
Picea x lutzii	Lutz spruce
Picea mariana	black spruce
Picea sitchensis	Sitka spruce
Pyrola asarifolia	pink wintergreen
Rosa acicularis	prickly rose
Rubus chamaemorus	cloudberry
Rubus pedatus	five-leaved bramble
Salix barclayi	Barclay's willow
Salix sitchensis	Sitka willow
Shepherdia canadensis	russet buffaloberry, soapberry
Spiraea stevenii	beauverd spirea
Tsuga mertensiana	mountain hemlock
Vaccinium uliginosum	bog blueberry
Vaccinium vitis-idaea	low-bush cranberry
Viburnum edule	high-bush cranberry

3.1 Species of Concern

The United States Department of Agriculture (USDA) designates 18 vascular plants as sensitive in the Alaska Region. The 13 sensitive plants known or suspected to occur in the CNF are included in Table 3-2 (Goldstein, Martin, and Stensvold 2009). A detailed 2006 study of the proposed routes for the Sterling Highway Project identified none of the 2002 USDA-listed species along any of the proposed highway corridors in the Cooper Landing area (HDR Alaska, Inc. 2006). Evaluation of additional species added to

the list in 2009 concluded that spotted lady's slipper (*Cypripedium guttatum*) and the Alaska rein orchid (*Piperia unalascensis*) were the only two species of concern considered likely to occur in the project area; however, they were not identified in any of the preceding project inventories (FHWA & AKDOT&PF 2018). *C. guttatum* has not been identified within KNWR or the project area (pers. com. M. Bowser); the nearest confirmed identification is from the Portage Lake vicinity (Stensvold 2000). *P. unalascensis* sightings and herbarium records were found for Southeast Alaska and the Aleutian Islands, but not for Southcentral Alaska.

TABLE 3-2. SPECIES LISTED AS SENSITIVE BY THE USDA IN THE CHUGACH NATIONAL FOREST (GOLDSTEIN, MARTIN, AND STENSVOLD 2009)

Scientific Name	Common Name	Occurrence in CNF
Aphragmus eschscholtzianus	Eschscholtz's little nightmare	Known
Botrychium tunux	Moosewort fern	Suspected
Botrychium yaaxudakeit	Moonwort fern	Suspected
Botrychium spathulatum*	Spatulate moonwort	Suspected
Cochlearia sessilifolia*	Sessileleaf scurvygrass	Suspected
Cypripedium guttatum*	Spotted lady's slipper	Known
Cypripedium montanum*	Mountain lady's slipper	Suspected
Cypripedium parviflorum var. pubescens*	Large yellow lady's slipper	Suspected
Ligusticum calderi	Calder lovage	Suspected
Papaver alboroseum	Pale poppy	Known
Piperia unalascensis*	Alaska rein orchid	Suspected
Romanzoffia unalaschcensis	Unalaska mist-maid	Known
Tanacetum bipinnatum subsp. Huronense*	Dune tansy	Suspected

*Species added to 2009 USDA Alaska Region Sensitive Species List (since 2002).

3.2 Non-native plant species

Table 3-3 lists non-native plant species known to occur in the project area. This list does not include species believed eradicated from the Refuge (KNWR 2018). Priority comments are from the *High Priority Invasive Plants of the Kenai Peninsula* guide published by the Kenai Peninsula Cooperative Weed Management Area (KPCWMA 2009). Species noted as "Prohibited" are listed in the Alaska Administrative Code (AAC) as prohibited in seed mixes. (The only codified prohibition of invasive species under Alaska law is 11 AAC 34.020 *Prohibited and restricted noxious weeds*). Invasiveness rankings from the Alaska Exotic Plants Information Clearinghouse (AKEPIC) evaluate the potential invasiveness and impacts of each species. Invasiveness ranking scores are >80 = "Extremely Invasive", 70-79 = "Highly Invasive", 60-69 = "Moderately Invasive", 50-59 = "Modestly Invasive", 40-49 = "Weakly Invasive", and < 40 = "Very Weakly Invasive" (Carlson et al. 2008).

Invasive species anticipated or identified in the project area are incorporated in Table 3-3 and Figure 3-1. (KNWR 2018, KPCWMA 2009). Additional data from invasive plant surveys following the Swan Lake Fire are also incorporated (ACCS unpub.).

TABLE 3-3 KENAI NWR INVASIVE PLANT SPECIES (KNWR 2018, KPCWMA 2009, ACCS)

Species	Common Name	Priority
Alopecurus geniculatus	water foxtail	AKEPIC #49
Alopecurus pratensis	meadow foxtail	AKEPIC #52
Bromus inermis	smooth brome	AKEPIC #62
Capsella bursa-pastoris	shepherd's purse	AKEPIC #40
Cerastium fontanum ssp. vulgare	big chickweed	AKEPIC #36
Chenopodium album	lambsquarters	AKEPIC #37
Crepis tectorum	narrowleaf hawksbeard	Common; AKEPIC #56
Elymus repens	quackgrass	AKEPIC #59
Elymus sibiricus	Siberian wildrye	AKEPIC #53
Erysimum X marshallii	Siberian wallflower	
Galeopsis tetrahit	brittlestem hempnettle	Prohibited; AKEPIC #50
Hordeum jubatum	foxtail barley	AKEPIC #63
Leucanthemum vulgare	oxeye daisy	Common; AKEPIC #61
Lepidium ramosissimum	manybranched pepperweed	
Linaria vulgaris	butter-n-eggs	Common; Prohib.; AKEPIC #69
Lolium multiflorum	Italian ryegrass	AKEPIC #41
Lolium perenne	perennial ryegrass	AKEPIC #52
Lupinus polyphyllus	bigleaf lupine	AKEPIC #55
Matricaria discoidea	pineapple weed	AKEPIC #32
Phalaris arundinacea	reed canarygrass	High; AKEPIC #83
Phleum pratense	timothy	AKEPIC #54
Plantago major	common plantain	Prohibited; AKEPIC #44
Poa annua	annual bluegrass	Prohibited; AKEPIC #46
Poa compressa	Canada bluegrass	AKEPIC #39
Poa pratensis ssp. pratensis	Kentucky bluegrass	AKEPIC #52
Polygonum aviculare	prostrate knotweed	AKEPIC #45
Rorippa spp.	yellowcress	Prohibited (*Rorippa austriaca*)
Rumex acetosella	common sheep sorrel	AKEPIC #51

Species	Common Name	Priority
Rumex crispus	curly dock	AKEPIC #48
Secale cereale	cereal rye	
Silene latifolia	bladder campion	AKEPIC #42
Stellaria media	common chickweed	AKEPIC #42/54
Taraxacum officinale	common dandelion	AKEPIC #58
Trifolium hybridum	alsike clover	AKEPIC #57
Trifolium pratense	red clover	AKEPIC #53
Trifolium repens	white clover	AKEPIC #59
Turritis glabra	tower rockcress	
Vicia cracca	bird vetch	Prohibited; High; AKEPIC #73

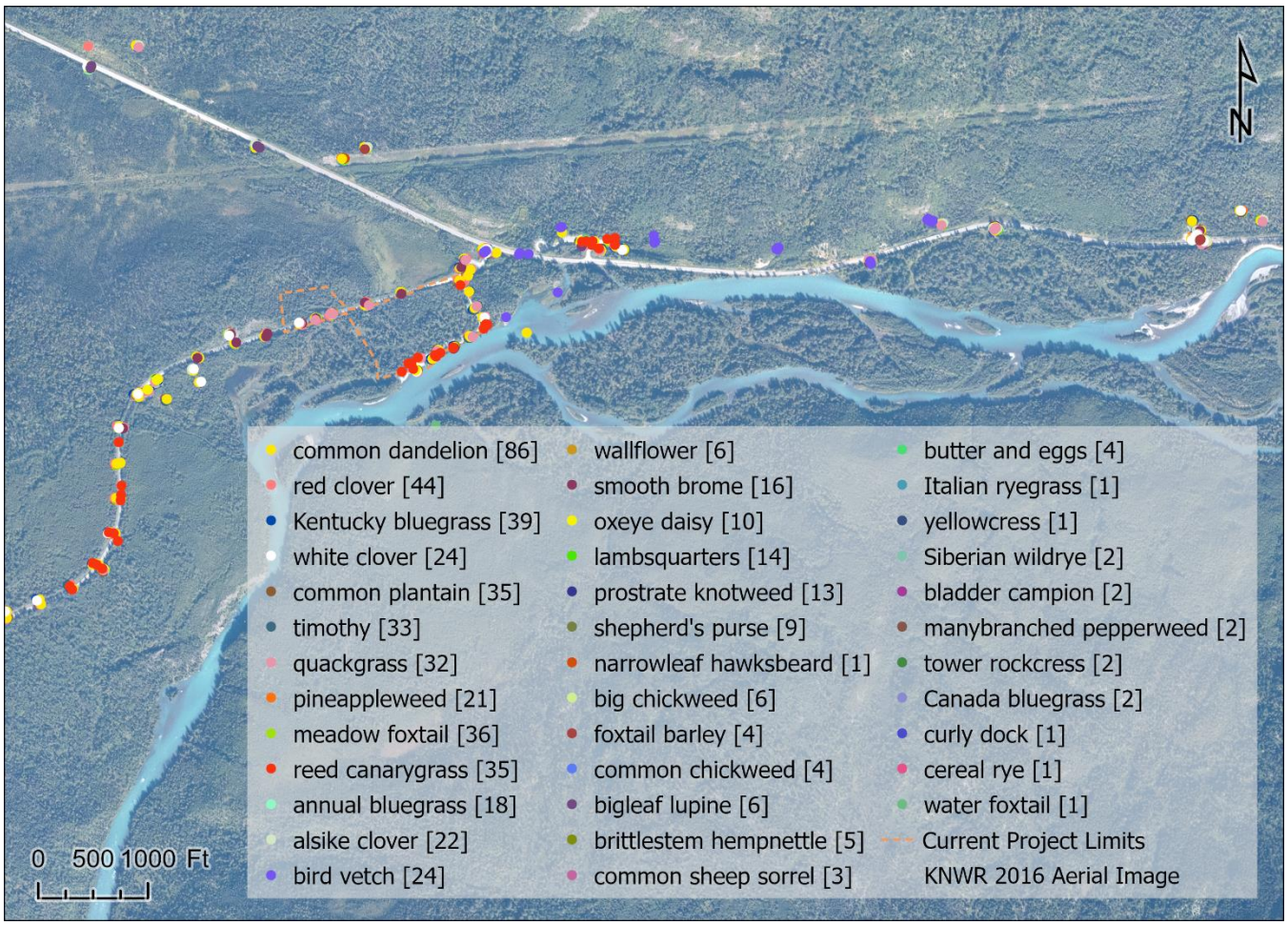

Figure 3-1 Invasive plants inventoried in project area (KPB 2020a)[1]

[1] Numbers in brackets are counts of how often the species occurs within the map area.

3.2.1 Elodea spp.

All known populations of *Elodea spp.* on the Kenai Peninsula have been eradicated. Elodea is an invasive aquatic plant known to degrade water quality and impact native fisheries outside its range. It is especially considered a threat to the extremely valuable sockeye salmon fishery due to their dependence on lake habitat. Continued vigilance, especially in areas used by watercraft and floatplanes, is necessary until the plant is eradicated from neighboring parts of Alaska (Morton et al. 2019).

4 Habitat

Jims' Landing is approximately midway through the Upper Kenai River (typically defined as the stretch of river from the Kenai Lake through Skilak Lake). The tributary stream Jean Creek passes through the project area and enters the river downstream of the boat launch. This section of the river is largely enclosed within the Chugach National Forest and KNWR (KRCMP 1997). A description of vegetative habitat types in the Kenai River drainage follows. Discussions of lake and stream habitats within the project area are included in the Project's Wildlife Resources Study report.

4.1 Riparian

Riparian and wetland areas are among the key habitats for supporting fish and wildlife resources along the Kenai River. Riparian areas include stream banks and floodplains supporting streamside vegetation. This riparian vegetation serves several key functions, including protective cover and food sources for aquatic life, diverse habitat and feeding opportunities for terrestrial species, erosion protection and flood control, filtration of pollutants, and groundwater recharge (KRCMP 1997).

Destruction of riparian habitat from bank fishing is a critical management issue in this popular fishery. The Upper Kenai River Cooperative Plan (UKRCP) calls for no net loss of riparian habitat as a result of bank fishing as a standard to be met. On the Russian River, the plan calls for no additional disturbance in moderately disturbed areas and "positive change" in more disturbed areas (UKRCP 1997). Recommendations for implementing these standards include monitoring vegetation, implementing restrictions, improving visitor information materials, installing light-penetrating walkways, and revegetating in areas that do not naturally improve (KRCMP 1997).

Recognizing the critical importance of the riparian environment to the water quality and fisheries health, the Kenai Peninsula Borough (KPB) protects all lands within 50 feet of the ordinary high water mark of anadromous streams (as catalogued by the Alaska Department of Fish & Game (ADF&G)) from the negative effects of "removal of near shore native vegetation, bank erosion, bank trampling, pollution, inadequate tourism infrastructure, unsuccessful attempts to remedy bank erosion or protect and restore habitat, inconsistent regulations and enforcement, logging, grazing, mining, wetland fill and drainage, excavation and fill of property, dredging, inappropriately installed culverts, fuel storage, and maintenance of existing structures". (KPB 1996)

Conditional Use Permits are required for "public-owned facilities, parks, campgrounds, and their related uses and structures" or "transportation and utility infrastructure". In addition to other measures, the permit would likely require that "the use or structure will not cause significant erosion, sedimentation, damage to the habitat protection district, an increase in ground or surface water pollution, and damage to riparian wetlands and riparian ecosystems". (KPB 1996)

Riverine or riparian wetlands in the project area are preliminarily identified as unconsolidated bottom upper perennial riverine wetlands (Figure 5-4).

4.2 Wetlands

Wetland areas include areas that are inundated or saturated with water sufficiently throughout the growing season to support vegetation adapted in low-oxygen saturated soil conditions. Similar to riparian areas, wetlands provide diverse habitat and water quality functions important to sustaining healthy ecosystems (KRCMP 1997). Wetland types common in the vicinity are described below.

4.2.1 Forested Wetlands

Forested wetlands in the vicinity are typically dominated by black spruce with scrub-shrub and herbaceous understory consisting mostly of low-bush cranberry, crowberry, Barclay's willow, bog blueberry, and northern Labrador tea. These wetlands are the most common in the vicinity and are critical for the area's groundwater recharge, groundwater discharge, sedimentation pretention and pollutant removal, food chain support, wildlife habitat, and human non-consumptive values and uses. (HDR Alaska 2010a, 2010b)

4.2.2 Deciduous Shrub Thicket Wetlands

Deciduous Shrub Thicket Wetlands are often found adjacent to streams or ponds and therefore provide additional functional support as a source of shoreline, streambank, or soil stabilization and as a habitat for fish with their dangling roots or overhanging parts along banks. These were characterized by Sitka alder and a Barclay willow forming a dense shrub stratum overstory. Tree saplings, meadow horsetail, bunchberry dogwood, and bluejoint reedgrass dominate the other vegetation strata. (HDR Alaska 2010a, 2010b)

4.2.3 Shrub-Dominated Bogs

Shrub-dominated bogs are similar to deciduous shrub thicket wetlands in their functions and vegetation, except that the alder and willow are absent or stunted, making room for a range of shrub species like those found in forested wetlands (low-bush cranberry, crowberry, bog blueberry, and northern Labrador tea). They are also more likely to provide human non-consumptive values and uses as a source of several subsistence foods and resources. Stunted black spruce and dwarf birch, alder, and willow are also present. Common herbs in these bogs are bluejoint reedgrass, field horsetail, northern scouring rush, and water sedge (HDR Alaska 2010a, 2010b). Shrub-dominated bogs in the project area are preliminarily identified as seasonally saturated palustrine scrub-shrub broad-leaved deciduous or needle-leaved evergreen wetlands (Figure 5-4).

4.2.4 Emergent Wetlands

Emergent wetlands in the vicinity are typically more saturated or seasonally inundated than forested and shrub wetland types. They support communities of herbs including beaked sedge, water sedge, tall cotton grass, Chamisso's cotton grass, northern scouring-rush, and few-flowered sedge. Hummocky areas contain stunted black spruce and Sitka alder, shrubby cinquefoil, dwarf birch, and northern Labrador tea. Emergent wetlands adjacent to fish-bearing waters may also provide habitat when inundated (HDR Alaska 2010a, 2010b). Emergent wetlands in the project area are preliminarily identified as persistent emergent or palustrine scrub-shrub broad-leaved deciduous wetlands (Figure 5-4).

4.2.5 Ponds

In this section of the Upper Kenai River drainage, ponds are most often closely associated with the river (nearby or directly adjacent). These ponds support a range of functions from hydrologic benefits and erosion control to fish and wildlife habitat, human non-consumptive uses, and uniqueness. Many such sites in this area correspond with Alaska Native cultural sites or artifacts (HDR Alaska 2010a, 2010b). Seasonally inundated wetlands in the project area are preliminarily identified as emergent or unconsolidated bottom palustrine deciduous wetlands (Figure 5-4).

4.3 Forest

Dominant coniferous tree species in the vicinity include Lutz spruce, black spruce, and mountain hemlock. For deciduous species, Kenai birch, quaking aspen, and black cottonwood are most common. (Sivils 2005; FHWA & AKDOT&PF 2018)

Recent mapping for the Sterling Highway Project identified two types of deciduous forest (birch-dominated and aspen-dominated) and three types of needle-leaved forest (black spruce forest, Lutz spruce forest, and hemlock forests) (HDR Alaska 2006). Mixed needle-leaved and broad-leaved forests are the most prevalent in the vicinity. Directly adjacent to the project area, HDR Alaska, Inc. mapped open paper birch – cottonwood – spruce forest (Sivils 2005).

A Kenai Peninsula forest vegetation project conducted in partnership between the CNF, KNWR, and ADF&G was used to map potential forest types in the project vicinity. This mapping was conducted using both satellite and airborne remote sensing techniques and data collected between 2010 and 2016 (Bellante et al. 2020). The project area has primarily mixed white and Lutz spruce and birch (Figure 4-1).

Wildfire is a key process in forests dominated by black spruce and Refuge management strategies have been updated to reflect that need. Similarly, spruce bark beetle (*Dendroctonus rufipennis*) infestation is a dominant process in renewal of white spruce forests. (KNWR 2010)

4.4 Scrub-Shrub and Meadows

In addition to tree-dominated forests, HDR Alaska, Inc. (2006) found that alder-dominated shrub thickets were common along streams and ponds. Previously-disturbed areas were typically home to a variety of herbaceous meadow species. These dense shrub thickets were comprised of Sitka alder and a variety of willow species (*Salix Spp.*) (HDR Alaska 2010a).

A variety of meadow types are present in the vicinity, including dry meadows dominated by bluejoint reedgrass or fireweed and meadows dominated by wetland sedges and grasses such as beaked sedge, water sedge, and Chamisso's cotton grass. (HDR Alaska 2010a)

The Kenai vegetation mapping project identified wet or mesic herbaceous vegetation (Figure 4-1, Bellante et al. 2020). Some of the project area identified as herbaceous is already developed as road or parking area.

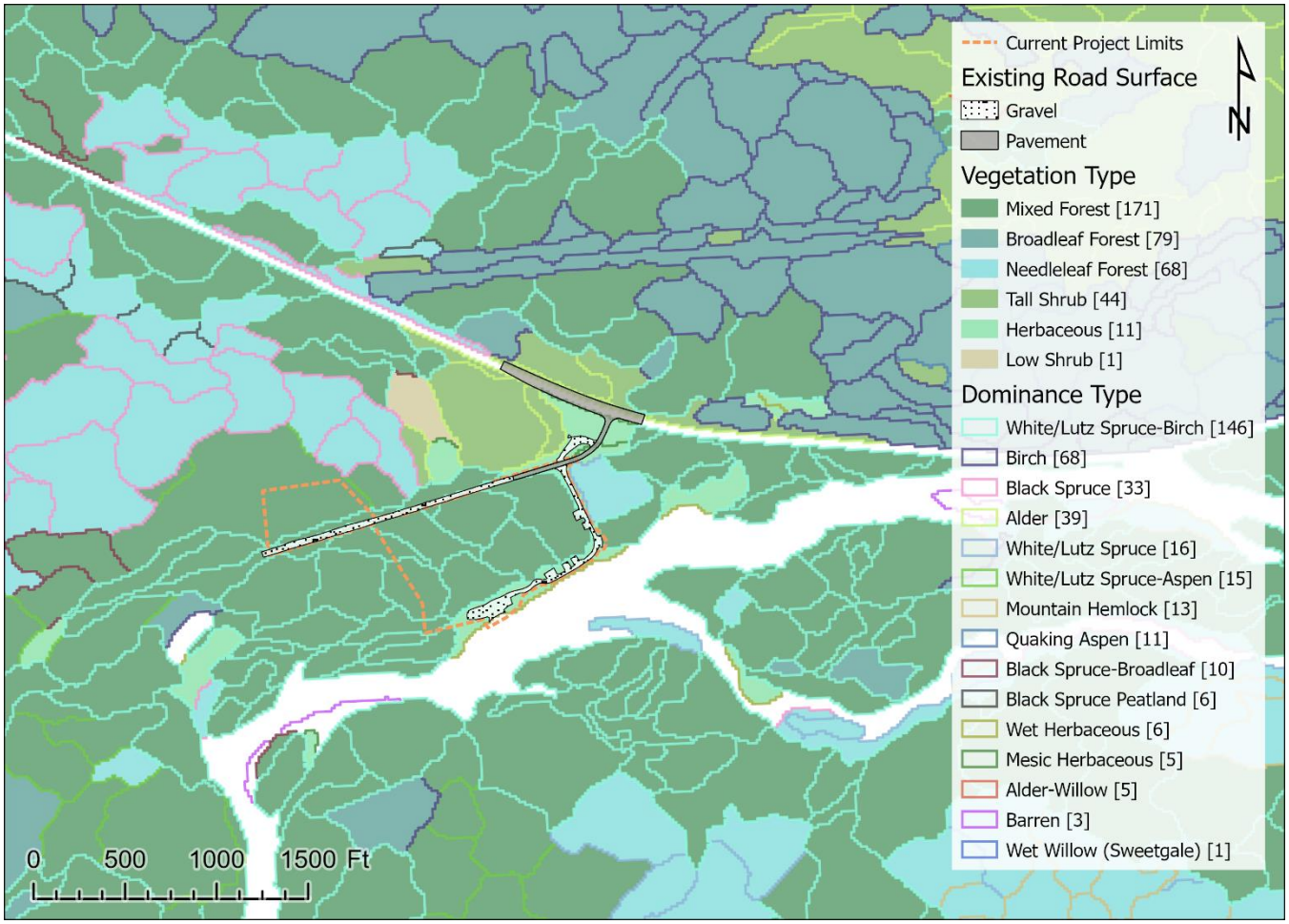

Figure 4-1 Remotely sensed vegetation types from Kenai Peninsula Existing Vegetation Map Project (Bellante et al. 2020)[2]

5 Project Area Wetlands

A desktop study was conducted comparing the results of the Sterling Highway Project with the results of the 2018 wetlands survey conducted for this project (Farmer 2018). The area of interest (AOI) (Figure 5-2) identified during that project phase was smaller than the current AOI, so the 2018 survey does not cover the full project area. Similarly, the Sterling Highway project AOI covers only about a quarter of the current project area to the northeast.

Additional information reviewed includes 2016 aerial imagery collected at a regional scale by the Kenai National Wildlife Refuge (KNWR 2016). The resolution of this imagery allows a general recognition of plant community patters but is not sufficient for species identification. World aerial imagery from Esri was also reviewed (ESRI 2020). Although this imagery was slightly higher resolution, horizontal position was not as accurate as the KPB image. The comparison of the two (apparently taken at slightly different seasons) provided some additional insight into plant community variation.

[2] Numbers in brackets are counts of how often the type occurs within the map area.

Multiple studies conducted for the Sterling Highway Project (FHWA & AKDOT&PF 2018), culminating in a 2010 Preliminary Jurisdictional Determination (following U.S. Army Corps of Engineers (USACE) wetland delineation standards), found the bulk of the proposed highway realignment corridor in the Cooper Landing vicinity to be uplands. Typical wetlands in the realignment corridor were palustrine forested, deciduous shrub, shrub-dominated bogs, and emergent wetlands associated with rivers and streams. These wetlands were generally found to be connected directly to the Kenai River or its tributaries or were connected via culverts or other constructed conveyance and so most or all are likely jurisdictional. (HDR Alaska 2010a)

Additionally, GIS data from the National Wetlands Inventory (NWI) were overlain over the whole area (Figure 5-3; USFWS 2020). The NWI classifies wetlands using the Cowardin (1979) system, which requires only that at least one of three parameters be met for a site to be characterized as wetlands: vegetation, soils, or saturation during the growing season. This method is not used when assessing wetland mitigation requirements, but the dataset provides a potential baseline for wetland extents at a regional level.

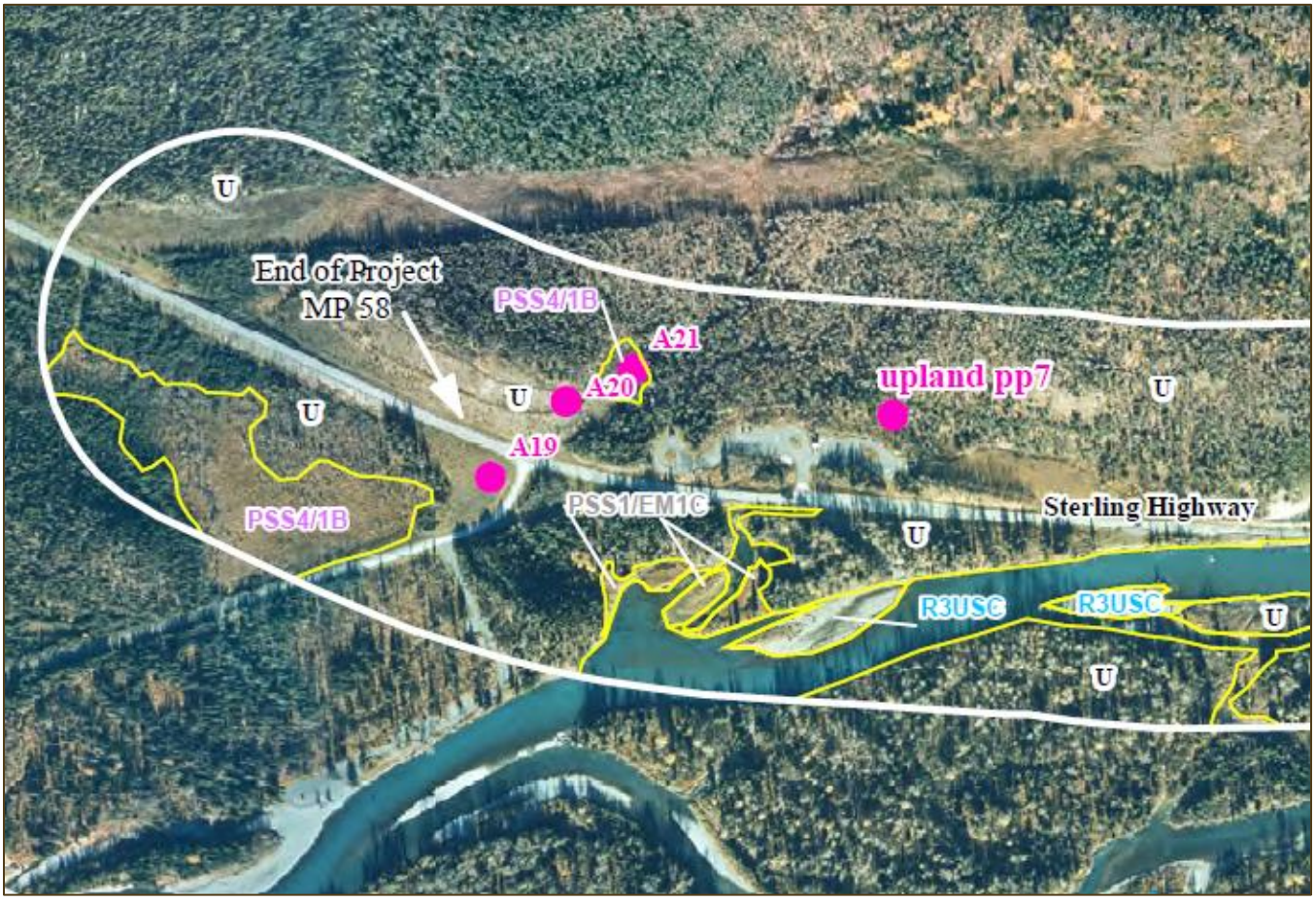

Figure 5-1 Western end of the Sterling Highway Project Preliminary Jurisdictional Determination (HDR Alaska 2010a)

Within the section of the 2010 project area that overlaps the current Jims' Landing Project Area, abundant palustrine needle-leaved scrub/shrub (Cowardin classification PSS4/1B) were mapped north of Skilak Lake Road (Figure 5-1). No wetlands were identified within the project area southeast of the

road, although only one corner of that area was mapped. This area identified as uplands in the 2010 survey overlaps significant areas identified as wetlands in the 2018 Farmer survey.

The 2018 project-specific wetlands survey memo states that it was performed using the USACE Routine Large Area Method (Figure 5-2, Farmer 2018). However, at least one of the three wetland data points was identified using a single wetlands indicator (hydrophytic vegetation), which is not consistent with USACE wetland delineation methodology. Additionally, no upland site descriptions were provided as a guide for delineating wetlands/uplands boundaries, which also deviates from USACE guidance (Environmental Laboratory 1987; USACE 2007).

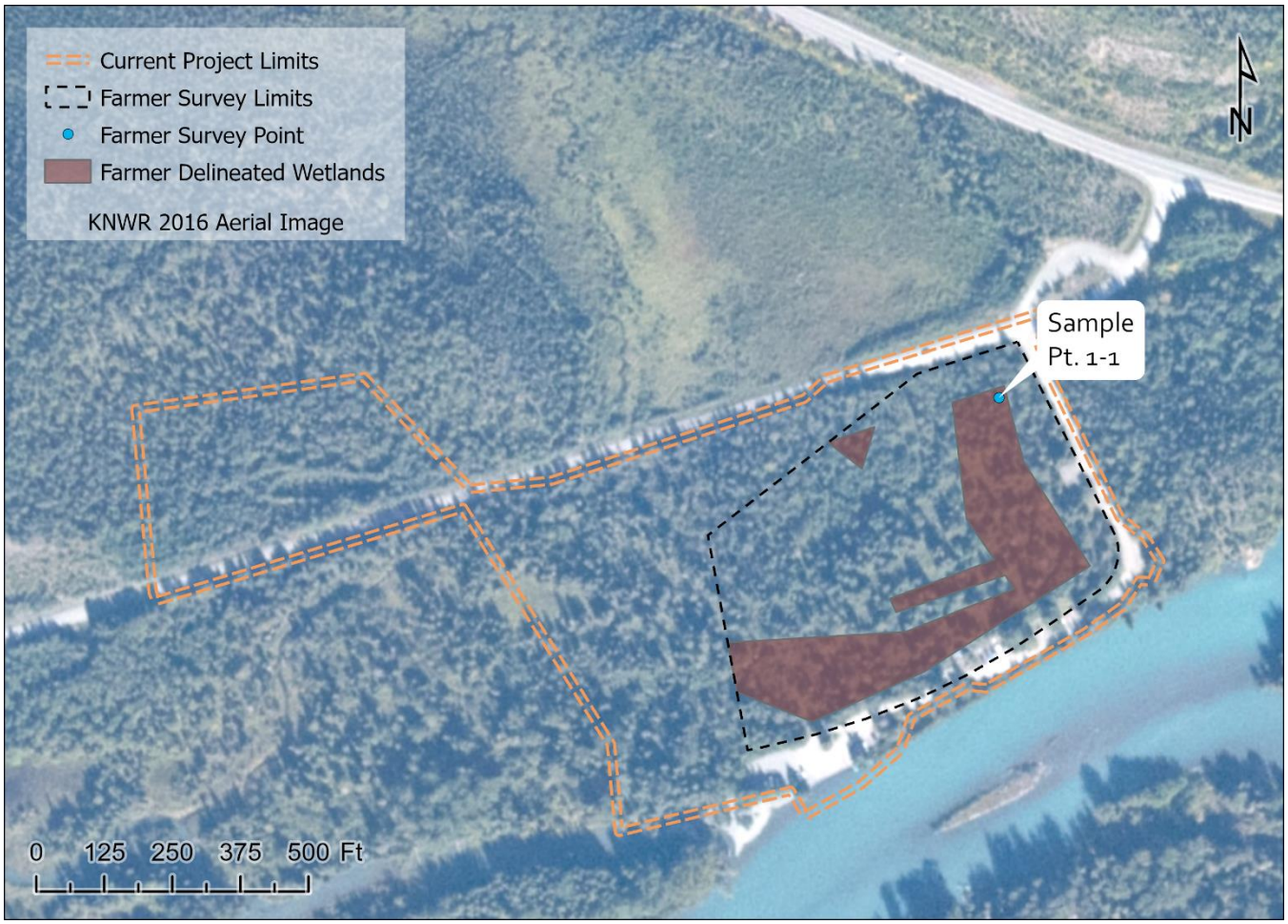

Figure 5-2 2018 Farmer wetlands survey (Farmer 2018). Digitized approximately using best visual fit of road shoulder compared to 2020 planimetric survey (PND 2020)

Furthermore, the two sites identified as wetlands using all three parameters required for the USACE methodology are both missing location information in the final memo and therefore cannot be correlated with the resulting map. The sample point identified during the 2018 Farmer survey as wetlands using a single-parameter test plots within the area contrastingly identified as uplands in the 2010 survey. Based on these factors, it is presumed that the HDR survey findings were more consistent with USACE guidance and standard practice than the 2018 Farmer survey.

Records from the NWI were generally consistent with the findings of the 2010 HDR survey (Figure 5-3, USFWS 2020).

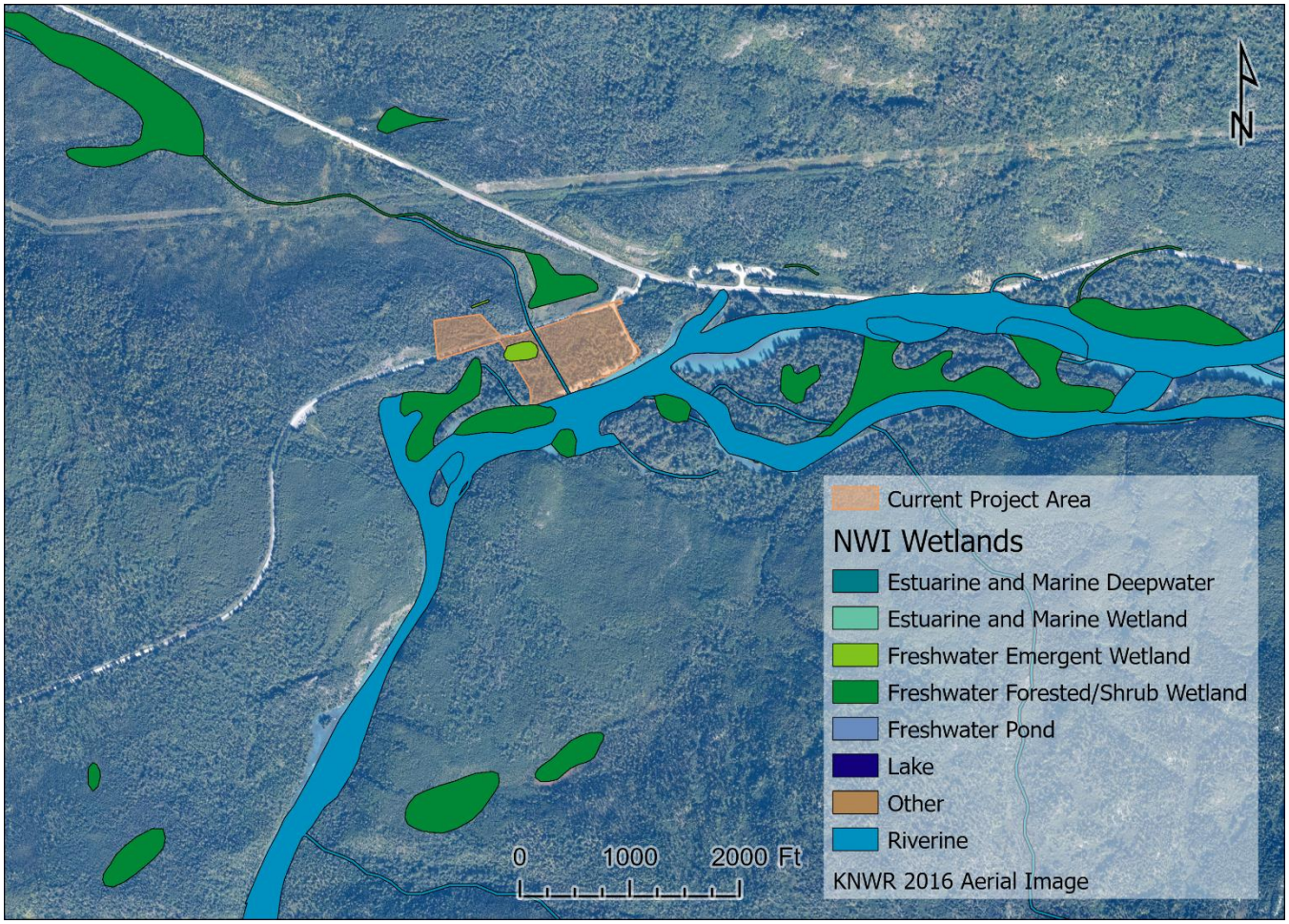

Figure 5-3 NWI wetlands in the project vicinity (USFWS 2020)

New preliminarily suspected wetland boundaries were digitized (Figure 5-4), taking into account apparent plant communities from available aerial images, 2020 project survey topography (with one-foot contour intervals), and the boundaries and descriptions from the sources described above. The immediate boundary of Jean Creek, as identified in the topographic survey, was identified as riverine wetland. Areas that appeared to sustain ponding for at least part of the year are noted as seasonally inundated. An area bounding a bend of Jean Creek and connecting sloped depressions in the southeast corner of the project area were identified in the Farmer survey and here as potential palustrine wetlands. These were identified as uplands in the 2010 HDR survey and the NWI; however, it was felt best to conservatively identify these depressional areas as wetlands until additional survey can be performed.

Riverine or riparian wetlands in the project area are preliminarily identified as unconsolidated bottom upper perennial riverine wetlands (R3UB). Shrub-dominated bogs are preliminarily identified as seasonally saturated palustrine scrub-shrub broad-leaved deciduous or needle-leaved evergreen wetlands (PSS1/4). Emergent wetlands are preliminarily identified as persistent emergent or palustrine scrub-shrub broad-leaved deciduous wetlands (PEM1/PSS1). Seasonally inundated wetlands in the project area are preliminarily identified as emergent or unconsolidated bottom palustrine deciduous wetlands (PUB/EM). Associations with Cowardin classifications are preliminary and not confirmed with field verification.

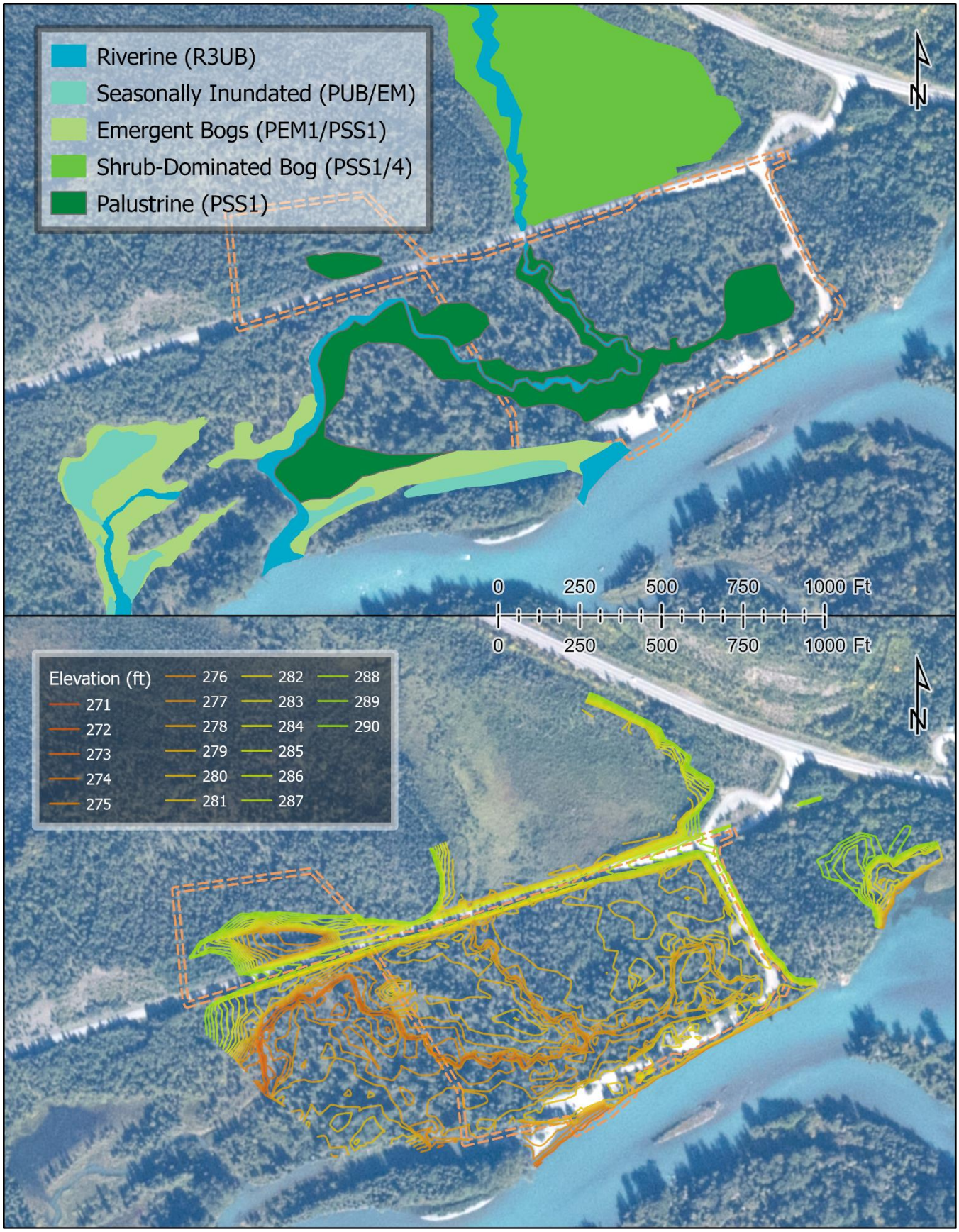

Figure 5-4 Suspected project area wetlands and preliminary classification; contours from 2020 survey

6 Habitat Management

Development of the project site is regulated under the National Environmental Policy Act (NEPA) as described in the project's Environmental Assessment (EA) as well as by a complex web of Federal, State, and Local laws, policies, and area plans. Many of these, as applicable to fish and wildlife in the project area, are summarized in the project's Wildlife Resources Survey. Regulations pertaining specifically to vegetation and wetlands habitat are discussed here. State regulations regarding invasive species (discussed in Section 3.2) are not repeated in this section, as they address agriculture and will primarily impact only reseeding protocols, as needed.

6.1 Wetland Functions

The Federal Water Pollution Control Act (or Clean Water Act, CWA) regulates the placement of dredged materials or fill in waters of the U.S. (WOTUS) and requires permitting for any such activity under guidelines established by the Environmental Protection Agency (EPA) and USACE (U.S. Congress 2002). Under the guidance framework, permitted activities are required to "avoid adverse impacts and offset unavoidable adverse impacts to existing aquatic resources, and for wetlands, … strive to achieve a goal of no overall net loss of values and functions" (USACE and EPA 1990).

For typical wetland permitting actions, USACE manages permit requirements and compensatory mitigation planning, oversight, and confirmation. In Alaska, compensatory mitigation is guided by supplemental instructions regarding the challenges of implementing nationwide policies in a region where a high proportion of lands are wetlands and where limited opportunities for restoring, enhancing, or establishing wetlands exist. In Alaska, minimization of impacts may become the primary means of meeting CWA guidelines when avoidance or compensatory mitigation are not practicable. (EPA and USACE 2018)

In the KPB, USACE is joined by other federal, state, and local agencies at the Donald E. Gilman River Center for permitting, information, and education efforts. The Center's Multi-Agency Permit Packet is designed to meet the information-gathering needs for a wide range of agency permits (KPB 2020b). The wetlands permitting process for any unavoidable project-related impacts will likely begin with this step.

6.2 Forest Fire

Fire regimes on the Kenai Peninsula are evolving in response to increases over historic human activity level and increases in global temperatures. The peninsula north of Kachemak Bay has historically had forest age limited by cycles of spruce bark beetle outbreaks. In recent history, however, the return rate of fires has shortened and significant burn acreage has resulted from both human-caused fires and fires of unknown origin. (KNWR 2013)

The Refuge's 2013 Fire Management Plan includes the project area in the Sterling Community Wildfire Protection Plan (CWPP) and within an area designated as "Full Fire Management Option". These areas are identified as having high value natural, cultural, and historical sites and warrant aggressive initial fire attack. (KNWR 2013)

In 2019, a lightning-caused fire burned 167,182 acres on the Kenai Peninsula, including a significant portion of Refuge lands within the Skilak Lake Wilderness Area (Figure 6-1). The fire originated west of the mountains, displaying unexpected behavior in crossing the range eastward to the Upper Kenai River

drainage. Unusually warm temperatures with extreme drought conditions contributed to increase the severity of the fire. While the fire had negative impacts to immediate beneficial use of the Refuge and to some wildlife and infrastructure, there were positive tradeoffs in the creation of new fire breaks, increase in future habitat variety, and even trail improvements resulting from fire-fighting efforts. There was no loss of life, primary residence, or significant infrastructure as a result of the Swan Lake Fire (Swan Lake Fire Interagency Management Team 2019). The fire did have some impact to parts of the project area, but the immediate AOI surrounding much of the proposed infrastructure remains relatively untouched (pers. obs. 2020).

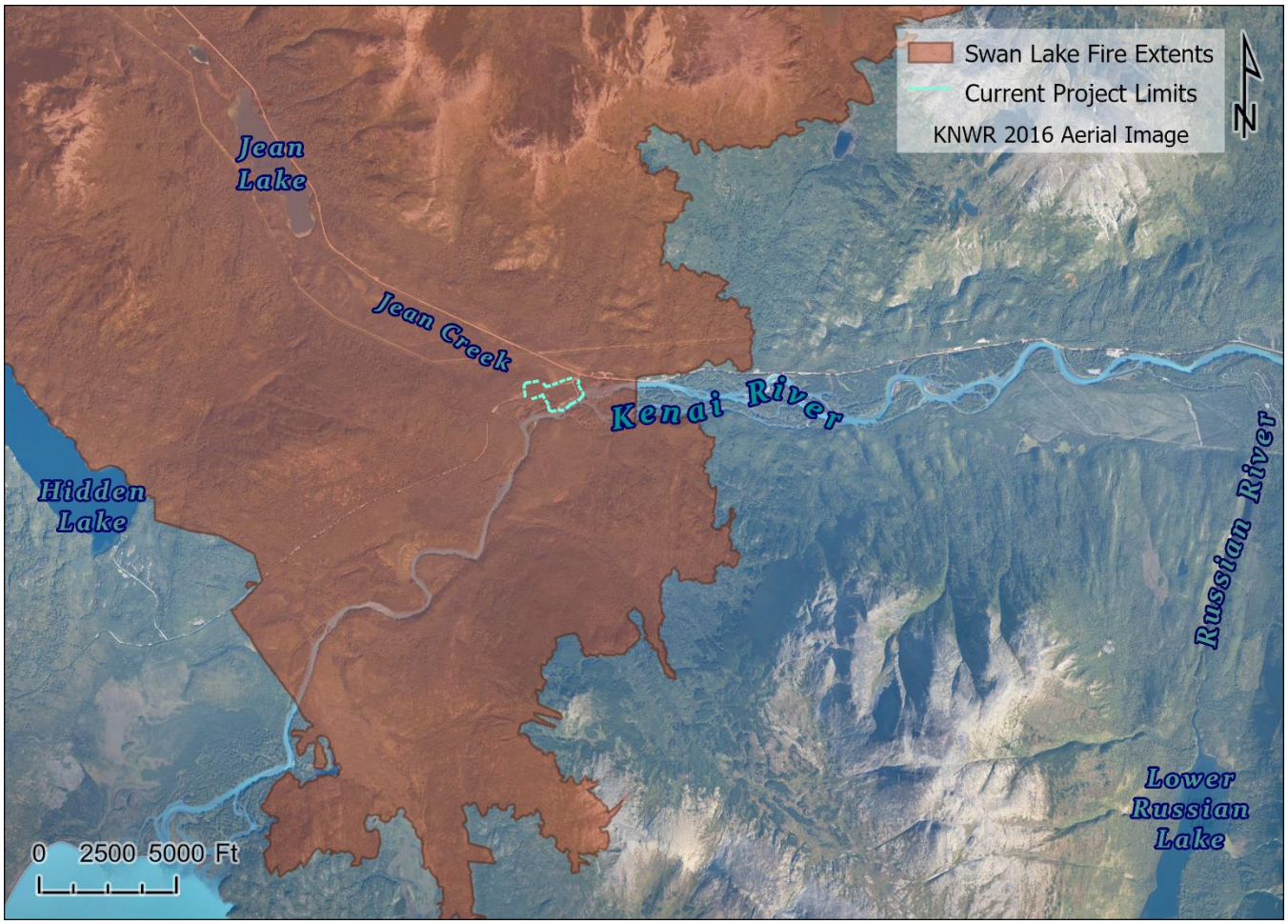

Figure 6-1 Extents of the 2019 Swan Lake Fire in the project's vicinity (KPB 2020)

7 References

ACCS. 2020. Unpublished survey of Invasive Species following the Swan Lake Fire. https://services7.arcgis.com/DlE4MSUhoXlyq64t/ArcGIS/rest/services.

ADNR. 2020. Alaska Department of Natural Resources ArcGIS REST Services Directory. https://arcgis.dnr.alaska.gov/arcgis/services.

Bellante, G., T. Boucher, B. Charnon, W. Goetz, K. Homan, C. Pan, N. Pugh, et al. 2020. Kenai Peninsula Existing Vegetation Map Project. GTAC-10209-RPT1. Salt Lake City, UT: U.S. Department of Agriculture, Forest Service, Geospatial Technology and Applications Center.

Bowser, M. 2021. Email communication via Stephen Miller dated January 8, 2021.

Carlson, M. L., I. V. Lapina, M. Shephard, J. S. Conn, R. Densmore, P. Spencer, J. Heys, J. Riley, and J. Nielsen. 2008. Invasiveness Ranking System for Non-Native Plants of Alaska. R10-TP-143. Anchorage, AK: U.S. Department of Agriculture, Forest Service, Alaska Region. https://accs.uaa.alaska.edu/wp-content/uploads/Invasiveness_Ranking_System_for_Non-Native_Plants_Alaska.pdf.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. U.S. Department of the Interior, U.S. Fish & Wildlife Service. https://www.fws.gov/wetlands/documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Vicksburg, MS: U.S. Army Corps of Engineers, Waterways Experiment Station.

Esri. 2020. World Imagery Layer. Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Accessed November 2020.

Farmer, B. 2018. Jims' Landing Access Road Wetland Delineation. Report to Bratslavsky Consulting Engineers, Inc. October 2018.

FGDC. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. 2nd Edition. Wetlands Subcommittee, Federal Geographic Data Committee and USFWS, Washington, DC. August 2013. https://www.fws.gov/wetlands/documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States-2013.pdf

FHWA & AKDOT&PF. 2018. Sterling Highway MP 45-60 Project Final EIS and Final Section 4(f) Evaluation. Anchorage, AK: U.S. Department of Transportation, Federal Highway Administration and State of Alaska Department of Transportation and Public Facilities. https://www.sterlinghighway.net/documents.html.

Goldstein, M. I., D. Martin, and M. C. Stensvold. 2009. 2009 Forest Service Alaska Region Sensitive Species List. Assessment and Proposed Revisions to the 2002 List. U.S. Department of Agriculture, Forest Service, Alaska Region. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_031979.pdf.

HDR Alaska, Inc. 2006. Biological Evaluation for Plants. Sterling Highway MP 45–60 Project. Anchorage, AK: Alaska Department of Transportation & Public Facilities. https://www.sterlinghighway.net/Documents/Biological-Evaluation-for-Plants-web.pdf.

———.. 2010a. Preliminary Jurisdictional Determination. 4-1992–0836. Sterling Highway MP 45–60 Project. Anchorage, AK: Alaska Department of Transportation & Public Facilities. https://www.sterlinghighway.net/Documents/Preliminary%20Jurisdictional%20Determination%20-%20March-2010%20-%20pgs%201-21.pdf.

———. 2010b. Wetland Functional Assessment. Sterling Highway MP 45–60 Project. Anchorage, AK: Alaska Department of Transportation & Public Facilities. https://www.sterlinghighway.net/Documents/

Sterling%20Hwy%2045-60%20-%20Wetland%20Functional%20Assessment%20-%20March-2010%20revised.pdf.

———. 2010. Preliminary Jurisdictional Determination. 4-1992–0836. Sterling Highway MP 45–60 Project. Anchorage, AK: Alaska Department of Transportation & Public Facilities. https://www.sterlinghighway.net/Documents/Preliminary%20Jurisdictional%20Determination%20-%20March-2010%20-%20pgs%201-21.pdf.

KPCWMA. 2009. High Priority Invasive Plants of the Kenai Peninsula. Kenai Peninsula Cooperative Weed Management Area. http://www.kenaiweeds.org/user_images/Kenai%20Peninsula%20invasive%20plant%20field%20guide.pdf.

KNWR. 2007. Skilak Wildlife Recreation Area Revised Final Management Plan. Soldotna, AK: U.S. Department of the Interior, U.S. Fish & Wildlife Service, Kenai National Wildlife Refuge. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/skilak_revised.pdf.

———. 2010. Comprehensive Conservation Plan. Soldotna, AK: U.S. Department of the Interior, U.S. Fish & Wildlife Service. Kenai National Wildlife Refuge. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/USFWS_2010_Kenai_CCP.pdf.

———. 2013. Final Environmental Assessment for the Fire Management Plan. U.S. Fish and Wildlife Service, Kenai National Wildlife Refuge. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/Final%20EA-FMP_Kenai_Combined_small.pdf.

———. 2016. Kenai Peninsula 2016 Aerial Imagery. From Kenai Peninsula Topography using Structure from Motion. https://eros.usgs.gov/doi-remote-sensing-activities/2017/fws/kenai-peninsula-topography-using-structure-motion. Data accessed 2020 via KPB server https://maps.kpb.us/gis/services

———. 2018. Kenai National Wildlife Refuge Species List. Soldotna, AK: U.S. Department of the Interior, Fish & Wildlife Service.

KPB. 1996. Kenai Peninsula Borough. Chapter 21.18. - Anadromous Waters Habitat Protection. Code of Ordinances. https://library.municode.com/ak/kenai_peninsula_borough/codes/code_of_ordinances?nodeId=TIT21ZO_CH21.18ANWAHAPR#TOPTITLE.

———. 2020a. Kenai Peninsula Borough ArcGIS REST Services Directory. https://maps.kpb.us/gis/services

———. 2020b. The Donald E. Gilman River Center. Accessed December 4, 2020. www.kpb.us.

KRCMP. 1997. Kenai River Comprehensive Management Plan. Kenai, AK: Alaska Department of Natural Resources, Division of Parks & Outdoor Recreation; Alaska Department of Fish & Game, Habitat & Restoration Division; and Kenai Peninsula Borough. http://dnr.alaska.gov/parks/plans/krsmapln/krsmamp3.pdf.

Sivils, J. D. 2005. Vegetation Mapping. Sterling Highway MP 45–60 Project. HDR Alaska, Inc. https://www.sterlinghighway.net/Documents/Vegetation-Mapping-web.pdf.

Stensvold. M. C. 2000. UAM Herbarium (ALA), Vascular Plant Collection (Arctos). University of Alaska Museum of the North. Occurrence collected 26 June 2000. Accessed January 2021 via http://arctos.database.museum/guid/UAM:Herb:134537.

Swan Lake Fire Interagency Management Team. 2019. 2019 Swan Lake Fire - Story Map. October 28, 2019. https://nifc.maps.arcgis.com/apps/MapSeries/index.html?appid=8ab1e7c87c294afb90c101cc4ca38e41.

UKRCP. 1997. Upper Kenai River Cooperative Plan. Alaska Department of Natural Resources, Alaska Department of Fish & Game, U.S. Forest Service, and U.S. Fish & Wildlife Service. https://www.fws.gov/uploadedFiles/UpperKenaiRiverCoop_Plan_1997.pdf.

USACE. 2007. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-07-24. Vicksburg, MS: U.S. Army Engineer Research and Development Center. September, 2007. http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/erdc-el_tr-07-24.pdf

———. 2018. National Wetland Plant List, version 3.4. U.S. Army Corps of Engineers. Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. Accessed via http://wetland-plants.usace.army.mil/

———. 2020. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Accessed November, 2020. http://www.fws.gov/wetlands/

USACE & EPA. 1990. Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines. U.S. Army Corps of Engineers; U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2019-05/documents/1990_army-epa_mitigation_moa.pdf.

USFWS. 2010. Comprehensive Conservation Plan. 2010. Soldotna, AK: U.S. Department of the Interior, Fish & Wildlife Service, Kenai National Wildlife Refuge. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/USFWS_2010_Kenai_CCP.pdf.

U.S. Congress. 2002. Federal Water Pollution Control Act. U.S.C. Vol. Title 33. As Amended Through P.L. 107–303, November 27, 2002

USDA & NRCS. 2016. The PLANTS Database (http://plants.usda.gov, 2017). National Plant Data Team, Greensboro, NC 27401-4901 USA.

Viereck, L. A., C. T. Dyrness, A. R. Batten, and K. J. Wenzlick. 1992. The Alaska Vegetation Classification. PNW-GTR-286. Portland, OR: U.S. Department of Agriculture, U.S. Forest Service, Pacific Northwest Research Station. https://doi.org/10.2737/PNW-GTR-286.

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Appendix 3 Wildlife Resource Study

January 2021

Prepared for:

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JIMS' LANDING BOAT LAUNCH ACCESS AND PARKING IMPROVEMENTS

Kenai National Wildlife Refuge

Wildlife Resources Study

Prepared by:

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Acronyms and Abbreviations

AAC	Alaska Administrative Code
ADF&G	Alaska Department of Fish & Game
ADNR	Alaska Department of Natural Resources
AKDOT&PF	Alaska Department of Transportation & Public Facilities
ANILCA	Alaska National Interest Lands Conservation Act
AS	Alaska Statute
AWC	Anadromous Waters Catalog
DPOR	ADNR Division of Parks and Outdoor Recreation
EPT	Ephemeroptera, Plecoptera, and Trichoptera
ESA	Endangered Species Act
FHWA	Federal Highways Administration
GMU	Game Management Unit
KNWR	Kenai National Wildlife Refuge
KPB	Kenai Peninsula Borough
KRCMP	Kenai River Comprehensive Management Plan
KRSMA	Kenai River Special Management Area
Refuge	Kenai National Wildlife Refuge
RHFMP	Riparian Habitat Fishery Management Plan
Service	United States Fish & Wildlife Service
USFWS	United States Fish & Wildlife Service
UKRCP	Upper Kenai River Cooperative Plan
USGS	United States Geological Survey

Wildlife Resources Study for Jims' Landing Boat Launch Access and Parking Improvements

January 2021

1 Introduction

Jims' Landing Boat Launch is a facility within the Skilak Wildlife Recreation Area, which is a component of the larger Kenai National Wildlife Refuge (Refuge or KNWR). The U.S. Fish and Wildlife Service (Service or USFWS) has identified a need for improvements to the boat launch and associated parking areas in order to address public access and public safety deficiencies.

This report identifies fish, wildlife, and habitats that occur or are anticipated to occur within the vicinity and the regulatory framework relevant to these resources. The accompanying Vegetation and Wetlands Resources Study provides additional detail regarding plant communities.

2 Methods

Previous studies, reports, and mapping data regarding fish and wildlife species for the project area and vicinity were collected and reviewed.

3 Habitat

Jims' Landing is approximately midway through the Upper Kenai River (typically defined as the stretch of river from the Kenai Lake through Skilak Lake). The tributary stream Jean Creek passes through the project area and enters the river downstream of the boat launch. This section of the river is largely enclosed within the Chugach National Forest and KNWR (KRCMP 1997). A brief description of habitat types in the Kenai River drainage follows.

3.1 Lakes

Kenai Lake is home to multiple resident as well as anadromous fish species (for spawning and rearing). The lake is glacially fed and is enclosed by steep hillsides, creating a long narrow waterbody with few inlets. Limited development is present along the shoreline, although it is a popular destination for sport fishing from shore and by boat. (KRCMP 1997)

Jean Lake, just upstream of the creek which passes through the project area, is known to support spawning and rearing of sockeye salmon and coho salmon, as well as Dolly Varden (AWC 2020).

3.2 River and Stream

The Upper Kenai River begins at the western end of Kenai Lake and reaches Skilak Lake through the Kenai River Canyon after being joined by the Russian River at about river mile 73.6. Above river mile 73.6, adjacent uplands are largely within the Chugach National Forest, with the exception of private, state,

and municipal lands at the community of Cooper Landing. Below river mile 73.6, adjacent lands and waters are within the Refuge. (KRCMP 1997)

Jims' Landing is located on an outer bend of the river with higher velocities, leading to erosion and scour. This stretch of river and its tributaries are important habitat for anadromous fish spawning and rearing as well as a key area for several resident fish species. Habitat areas used by resident and anadromous fish vary throughout the season depending on factors, including water levels and discharge rates, substrate, water temperatures, sunlight, and vegetation. (KRCMP 1997)

Tributaries of the Upper Kenai River include Bean Creek, Juneau Creek (fed by Juneau Lake and Trout Lake), Cooper Creek (fed by Cooper Lake), Russian River (fed by lower and upper Russian Lake), Fuller Creek, Jean Creek (fed by Jean Lake), and Hidden Creek (fed by Hidden Lake). Quartz Creek, Ship Creek, Trail Creek (fed by Trail Lake and Grant Lake), Ptarmigan Creek, Primrose Creek, and Snow River are tributaries feeding into Kenai Lake.

Jean Creek, a Kenai River tributary passing through the project area, is known to support spawning and rearing of sockeye salmon and coho salmon, as well as Dolly Varden (AWC 2020).

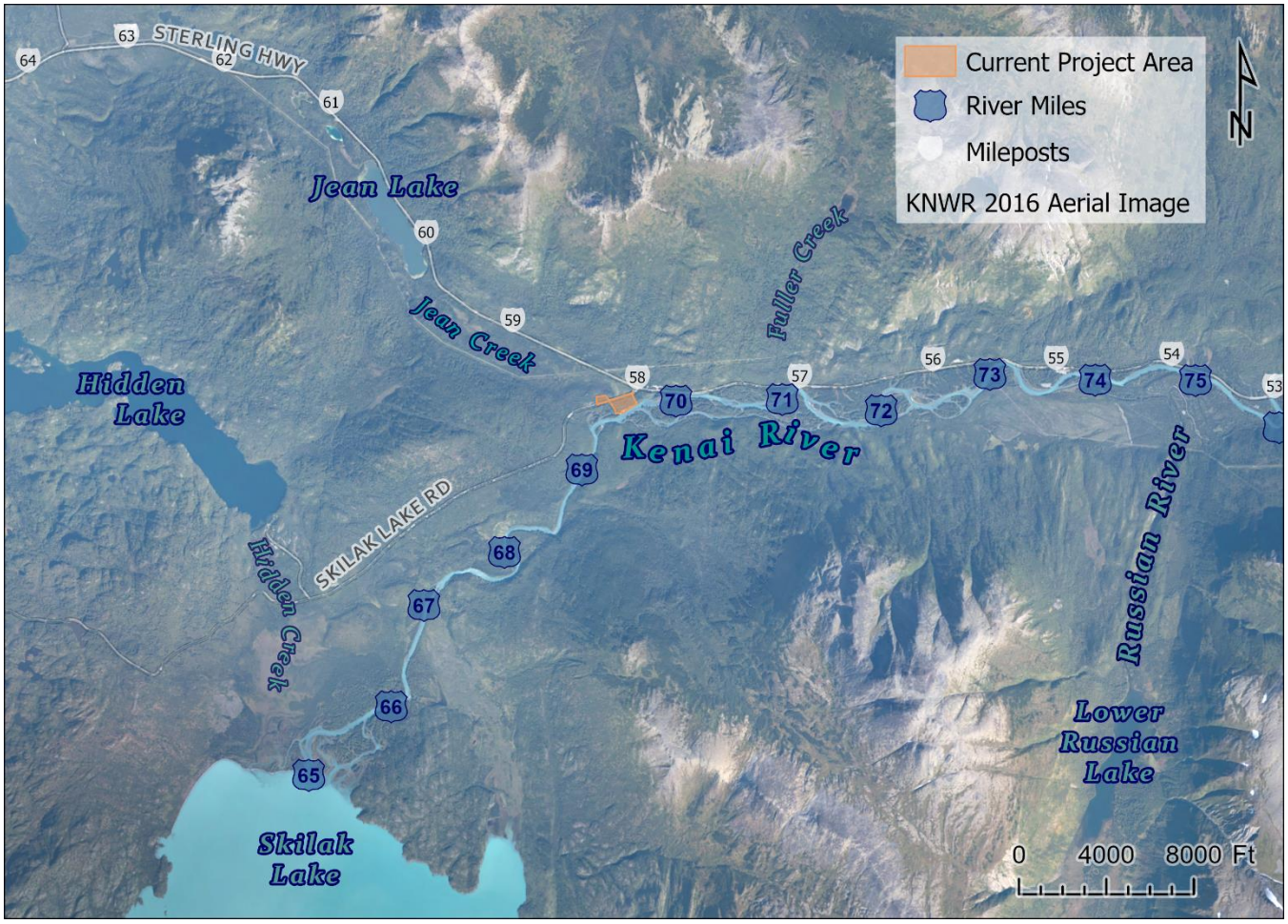

Figure 3-1 Overview map of project area vicinity (KPB 2020, KNWR 2016))

3.3 Riparian

Riparian and wetland areas are among the key habitats for supporting fish and wildlife resources along the Kenai River. Riparian areas include stream banks and floodplains supporting streamside vegetation. This riparian vegetation serves several key functions, including protective cover and food sources for aquatic life, diverse habitat and feeding opportunities for terrestrial species, erosion protection and flood control, filtration of pollutants, and groundwater recharge (KRCMP 1997). Additional details of riparian habitat in the project area are provided in the Vegetation and Wetlands Study.

3.4 Wetlands

Wetland areas include areas that are inundated or saturated with water sufficiently throughout the growing season to support vegetation adapted in low-oxygen saturated soil conditions. Similar to riparian areas, wetlands provide diverse habitat and water quality functions important to sustaining healthy ecosystems (KRCMP 1997). Additional details of wetland habitat in the project area are provided in the Vegetation and Wetlands Study.

3.5 Forest

Forests in the Refuge are typically black spruce forest, white spruce forests, or mixed spruce–hardwood forests. Wildfire is a key process in forests dominated by black spruce and Refuge management strategies have been updated to reflect that need. Similarly, spruce bark beetle is a dominant process in renewal of white spruce forests (KNWR 2010). Additional details of forest habitat in the project area are provided in the Vegetation and Wetlands Study.

4 Wildlife

In 1997, up to 200 species of birds, mammals, and amphibians and 34 species of fish were known to occur within the Kenai River basin (KRCMP 1997). According to the latest census, there are over 1,000 native wildlife species catalogued within the Refuge, including 208 vertebrate species and 848 invertebrate species (KNWR 2018). A description of wildlife anticipated in the vicinity of the project area is summarized below. Special status wildlife species and their habitats follow the discussion of general wildlife. All species described here may be presumed to potentially occur in or near Jims' Landing unless otherwise noted.

4.1 Mammals

26 mammal species are known to occur in the vicinity and may occur in the project area

TABLE 4-1. MAMMAL SPECIES WITH A POTENTIAL TO OCCUR IN THE PROJECT AREA

Scientific Name	common name	Likelihood of Occurrence in the Project Area
Ursus americanus	black bears	common
Ursus arctos	brown bears	common
Alces alces	moose	occasional
Rangifer tarandus	caribou	rare

Scientific Name	common name	Likelihood of Occurrence in the Project Area
Ovis dalli	Dall sheep	rare
Oreamnos americanus	mountain goats	rare
Canis lupus	wolves	occasional
Canis latrans	coyotes	occasional
Vulpes vulpes	foxes	rare
Lynx canadensis	lynx	occasional
Gulo gulo	wolverines	rare
Castor canadensis	beavers	occasional
Lontra canadensis	river otters	occasional
Ondatra zibethicus	muskrat	occasional
Neovison vison	American mink	common
Mustela erminea	ermine	common
Tamiasciurus hudsonicus	red squirrels	common
Mustela nivalis	least weasels	occasional
Martes americana	American marten	rare
Marmota broweri	Alaska marmot	rare
Erethizon dorsatum	common porcupine	common
Clethrionomys sp.; Microtus sp.	voles	common
Synaptomys borealis	northern bog lemming	occasional
Sorex sp.	shrews	common
Lepus americanus	snowshoe hares	common
Myotis lucifugus	little brown bats	occasional

4.1.1 Bears

4.1.1.1 Black Bears (*Ursus americanus*)

Black bears are found throughout most forested regions of mainland Alaska, although seasonally they may be found from coastal beaches to alpine areas (Johnson 2008a). They are the more common bear species on the Kenai Peninsula, with higher concentrations occurring north of the Kenai River. Black bear feed heavily on berries and green-stem vegetation, although they will prey on moose calves (KRCMP 1997). While black bears are most often shy of humans, conflicts can occur, especially if a food source is present. On rare occasions, black bears demonstrate a lack of fear of humans and will stalk or attack without apparent provocation (Johnson 2008a). No significant use of the project area was documented for black bears during the Sterling Highway Project; however, they may be occasionally found in the project area (FHWA & AKDOT&PF 2018).

Black bears are typically solitary, except mothers with cubs and during mating season from June through July. Cubs (typically pairs, although one to four are possible) are born in dens during winter hibernation and emerge with their mothers in spring. Cubs typically remain with their mother through their first winter, so females breed every other year, on average. (Johnson 2008a)

4.1.1.2 Brown bears (*Ursus arctos*)

Brown bears occur throughout Alaska except for on a few islands. In spite of differences in behavior and appearance that result in coastal "brown bears" being referred to separately from interior "grizzlies", the two are the same species (Eide and Miller 2008). On the Kenai Peninsula, brown bears concentrate most heavily along the Kenai River and its tributaries, feeding on salmon and spawned-out salmon carcasses. The areas downstream of Skilak Lake are most critical for the species; however, they can be found throughout the entire river drainage (KRCMP 1997). They are common in the vicinity of Cooper Landing and the Russian River and are likely to be found along Jean Creek during spawning season (late June through early September) (FHWA & AKDOT&PF 2018).

Brown bear cubs leave the den with their mothers in early spring and they remain together two to three years. They do not reach full adult size until year six. Food sources for brown bears range widely by season and locale (Eide and Miller 2008). Like black bears, brown bears are known to prey on moose calves (KRCMP 1997). Feeding during spawning season tends to result in much higher densities than normal and social behaviors aimed at minimizing inter-species conflict. Recognition of bear behavior in these environments can help to reduce conflict between humans and bears while accessing shared resources (Eide and Miller 2008).

The Upper Kenai River Cooperative Plan (UKRCP) includes recommendations for agencies to monitor and limit confrontations between humans and brown bears, especially within the Russian River area. Management responses to confrontations may include investigation, education, campground improvements, regulation of food storage, and area closures (UKRCP 1997).

4.1.2 Ungulates

4.1.2.1 Moose (*Alces alces)*

Moose are associated with forested, riparian, recently-burned, or cleared areas throughout Alaska as far north as the Colville River. They breed in the fall, with peak seasons in late September to early October. Calves (often twins or occasionally triplets) are born between mid-May and early June and generally remain with their mother until the next breeding season (Rausch, Gasaway, and Schwartz 2008). Moose browse willow, birch, and aspen as well as emergent plants in riparian and wetland areas. They calve in spring in cover within muskegs, bogs, and riparian areas. (KRCMP 1997)

The immense size and prevalence of area moose has long been a defining characteristic of Kenai Peninsula wilderness and its management. The interest in hunting these specimens galvanized the creation of the Kenai National Moose Range in 1941. Populations of moose have varied over the years in response to a wide range of factors, including the impacts of wildfire or hare population booms on food availability, predation by wolves, and hunting pressure (Naske 1980). Moose surveys in the 1970s and 1980s found 4 – 6 moose per square mile within a mile of the Kenai River. Densities have since decreased (KRCMP 1997). Moose population numbers in the Skilak Wilderness Management Area (SLWMA) were at an all-time low in 2013 (Herreman 2015).

Hunting of moose within the project area is limited to permit-only hunts managed by the Alaska Department of Fish & Game (ADF&G) (5 AAC 92.530(6)). Population levels were below the level required to permit hunts at last census (Herreman 2015).

4.1.2.2 Caribou (*Rangifer tarandus*)

Caribou are present throughout the Arctic, primarily in the tundra and sparse northern forests. In Alaska, only one subspecies occurs – the barrenground caribou (*R. tarandus granti*). In the Interior, they range between calving grounds in May and higher mountains or seacoasts after calving. After the hotter months of insect season, caribou tend to disperse more widely and browse in other areas to gain winter weight. Caribou migration routes and preferred areas can shift suddenly in response to resource availability. (Valkenburg 2008)

Caribou were reintroduced to the Kenai Peninsula in the mid-1960s. This herd now ranges between the Moose River Flats in winter and the Kenai River Flats in spring and summer. A second herd was introduced to the benchlands between Skilak Lake and Tustumena Lake in the mid-1980s. A third small herd is found in the northeastern portion of the drainage in the foothills of the Chugach Mountains. (KRCMP 1997)

4.1.2.3 Dall sheep (*Ovis dalli*)

Dall sheep inhabit extremely rugged mountainous areas of Alaska, using lower slopes and meadows to rest and feed only when apparently safe. Lambs are born in May or early June in the most rugged areas out of reach of predators, as they are unable to travel far in the first few days. Rams live separately from ewes until winter mating season. Dall sheep are susceptible to environmental changes and pressures from human development, although their ranges are still sufficiently separate to support healthy populations. (Olson 2008)

Dall sheep are present throughout the Chugach range. During winter months, Dall sheep keep to snow-free mountainous areas and cliffs. In the summer, they move down-slope to feed on young vegetation, moving upslope as the growing season progresses (KRCMP 1997). Although shy of humans and other predators, Dall sheep will descend to lower elevations for a variety of reasons, including seasonal food resources and descents necessary to cross to neighboring peaks. They are known to occasionally cross the Sterling Highway (FHWA & AKDOT&PF 2018). For this reason, they may be rarely present in the project area.

4.1.2.4 Mountain goats (*Oreamnos americanus*)

Mountain goat range extends through the northern Rocky Mountains and Cascades to Southeast Alaska. In Southcentral Alaska, they are found in the Chugach, Wrangell, and Talkeetna Mountains. Seasonal patterns of mountain goats are similar to Dall sheep, with males living in groups apart from females except in mating season. They graze in mountain valleys during the growing season, but spend the majority of the year at higher elevations, subsisting on available browse and fat stores during winter months. (Johnson 2008b)

Mountain goats are present drainage-wide in the mountains above Kenai River tributaries (KRCMP 1997). There were reports of declining goat populations through 2011 cited for the Sterling Highway Project (FHWA & AKDOT&PF 2018); however, in 2017, ADF&G reported the Kenai Peninsula Game

Management Units (GMUs) as supporting a "slightly increasing" population and permitted the harvest of ninety-two goats (ADF&G 2017).

4.1.3 Canids

4.1.3.1 Wolves (*Canis lupus*)

Wolves occur throughout mainland Alaska, on Unimak Island, and on most of the major Southeast islands. They are successful in a wide range of habitats. Wolves breed in February and March with litters born in dens in May or early June. Pups do not travel far from dens until early winter. In winter, wolves typically range 10 to 30 miles in a day, with young adults sometimes ranging much further from their original territories. (Stephenson and Boertje 2008)

Wolves were almost entirely extirpated from the Kenai Peninsula in the early 1900s by over-hunting and predator-control poisoning programs (Jozwiak 1999). By the late 1990s, five to seven wolf packs were known to occur within the Kenai River Basin (KRCMP 1997). An attempt was made to relocate 18 wolves from the Forty Mile Caribou Herd to the peninsula in 1998. The relocation attempt suffered a 78% mortality rate with the first 18 months (Jozwiak 1999). Wolves are present in the vicinity and may occasionally occur in the project area, although they are shy of humans.

4.1.3.2 Coyotes (*Canis latrans*)

Coyotes entered Alaska in the early 1900s and spread as far north as the Yukon River (Cornelius and Golden 2007). They reached the Kenai Peninsula around 1930 (ADF&G 1976 via Herreman 2020). Similar to wolves, coyotes mate between January and March. Family units begin to break up between August and November. Coyotes are generally less social than wolves, although mated pairs may remain together for years. Prior to 1969, bounties were in place in an attempt to exterminate coyotes, but the State's current policy is to control population levels (Cornelius and Golden 2007). There is no limit on the permitted take of coyotes nor on hunting season. Coyotes on the peninsula remain a source of conflict close to human habitation (Herreman 2020).

4.1.3.3 Foxes (*Vulpes vulpes*)

Red fox are common throughout Alaska, including on some islands that did not have native populations prior to their introduction in the early 1900s for fox-farming operations. They prefer mixed habitat with "extensive lowland marshes and crisscrossed hills and draws". Family units form during breeding in February and March and break up in autumn, after which they are typically alone (Jennings 2008).

Kenai red foxes (*Vulpes vulpes kenaiensis*) are a very rare subspecies and considered by the Refuge to be a candidate for extirpation (KNWR 2010). Red fox are only occasionally reported in areas north of Tustemena Lake (Herreman 2020). The last recorded ARCTOS museum specimen for foxes on the Kenai Peninsula is from 1989 on the southeastern coast (Rozdilsky 1989). Rare unconfirmed sightings have occurred periodically around the Peninsula since that time (Jozwiak 2010)

4.1.4 Furbearers

4.1.4.1 Lynx (*Lynx canadensis*)

Lynx are native to most of North America; however, their numbers and range in the Lower 48 States are greatly reduced. They remain common throughout mainland Alaska, although they are shy and elusive. Lynx mate in March and early April, with kittens born in natural shelters in June. Kittens do not open

their eyes for the first month, but are weaned by 2 – 3 months old. They inhabit forested areas as well as subalpine and successional habitats. (Stephenson 2008)

Historically, lynx on the Kenai Peninsula have been most common in the mixed deciduous/spruce forests north of Tustemena Lake. However, snowshoe hare populations shifted south after spruce forest fires cleared areas in State Management Unit 15C and lynx populations appear to have followed. Harvest of lynx is not permitted during low periods in population cycles. (Herreman 2020)

4.1.4.2 Wolverines (*Gulo gulo*)

Wolverines require a substantial amount of secluded wilderness territory and are receding substantially throughout their range in mountainous parts of North America. Resident adults typically have ranges of 100 to 200 square miles, though these ranges can overlap as resources allow. They breed and den from February through July and are especially territorial in this period. Kits become independent from their mothers in five or six months, but may remain in their birth ranges for a year or more. (Taylor 2008)

On the Kenai Peninsula, wolverine are most commonly found in the Kenai Mountains, Caribou Hills, and around the headwaters of Deep Creek and the Anchor River. Limited trapping of wolverine (one per year) is permitted, but accessibility challenges keep harvest numbers low (Herreman 2020). The Refuge reports an apparent decline in local populations of wolverines (KNWR 2010).

4.1.4.3 Beavers (*Castor canadensis*)

The beaver is native to most of mainland Alaska and was introduced to Kodiak Island in 1925. They require three to four feet of water for food storage and safety, often creating their own habitat by dam building if the need arises. They also construct dens for food storage and living area. In swift-flowing streams of sufficient depth, they may live in cave systems excavated into streambanks. Beavers mate in January or February with kits born between April and June. The kits will typically remain with their parents for two years. (Shepherd 2008)

Beaver are distributed throughout the Kenai River drainage but are especially abundant in tributaries between river miles 64 and 74 (KRCMP 1997). Signs of beaver activity can even be viewed directly on the banks of the main stem river (pers. obs. 1991). Beaver population dynamics on the Peninsula are poorly understood, but may be impacted by overharvesting and spring flood events (Herreman 2020).

4.1.4.4 Other furbearers

River otters (*Lontra canadensis*) are common in anadromous stream and lake systems and in sheltered coastal waters (Herreman 2020). In the Kenai River Basin, otters are more often found in remote sections of tributary streams (KRCMP 1997).

Muskrat (*Ondatra zibethicus*) are relatively absent along the Kenai River because of the scarcity of food and seasonally fluctuating water levels (KRCMP 1997).

American mink (*Neovison vison*) are found in every part of mainland Alaska, typically associated with the fringes of streams or other waterbodies (Burns 2008). Ermine (*Mustela erminea*) are similarly spread throughout Alaska and common in habitats varying from riparian woodlands to alpine and tundra habitats (Gotthardt et al. 2006). Both are common throughout the Peninsula, along with red squirrels (*Tamiasciurus hudsonicus*). Least weasels (*Mustela nivalis*) are only recently documented in the area and remain uncommon (Herreman 2020; McDonough and Olson 2009).

American marten (*Martes americana*) are more commonly found in uplands than riparian areas and do not occur in the tundra in western and northern Alaska (Shepherd and Melchior 2008). Marten are moderately abundant in the eastern portion of the Peninsula (Game Management Unit 7) and are increasing in prevalence in the area between the Kenai and Skilak Rivers. Population histories suggest that forest maturity plays an important role in marten population densities (Herreman 2020). The Refuge reports very low densities in the western peninsula (KNWR 2010).

Alaska marmot (*Marmota broweri*) occur in the vicinity but are limited to alpine areas (Herreman 2020).

4.1.5 Other mammals

Other mammals present on the Kenai Peninsula include common porcupine (*Erethizon dorsatum*), voles (*Clethrionomys sp.* and *Microtus sp.*), northern bog lemming (*Synaptomys borealis*), shrews (*Sorex sp.*), snowshoe hares (*Lepus americanus*), and little brown bats (*Myotis lucifugus*). (KNWR 2018; Herreman 2020)

Species of small mammals common to other parts of Alaska, but not yet documented on the Kenai Peninsula include the yellow-cheeked vole (*Microtus xanthognathus*), brown lemming (*Lemmus trimucronatus*), meadow jumping mouse (*Zapus hudsonius*), collared pika (*Ochotona collaris*), arctic ground squirrel (*Spermophilus parryii*), northern flying squirrel (*Glaucomys sabrinus*), and American water shrew (*Sorex palustris*) (McDonough and Olson 2009).

4.2 Birds

(KNWR 2010)

4.2.1 Raptors

4.2.1.1 Bald Eagles (*Haliaeetus leucocephalus*)

An estimated 300 to 600 bald eagles overwinter and feed along the Kenai River, the second largest concentration of overwintering eagles in Alaska. Eagles from as far as Homer and Kodiak have been observed overwintering in the drainage. In 1997, at least 29 pairs of eagles nested within the Kenai River watershed. The river's fish populations are the primary source of food for this population, especially the spawned out salmon carcasses that remain available in the upper river's swift-flowing sections through the winter. Eagle numbers increase from October until they peak in January, declining again in March. (KRCMP 1997)

Eagle habitat along the river is primarily within mature cottonwood and spruce trees. Nest trees are protected from disturbance during nesting season, and guidelines are established for construction within range of those trees during nesting season. (KRCMP 1997) The UKRCP requires annual monitoring of bald eagle nests to ensure that historic populations and nesting success rates are maintained and the use of closures and public education if necessary (UKRCP 1997).

An eagle's nest was identified approximately 500 feet west of the boat launch during 2020 project surveys. A previously reported nest in the parking area adjacent to the restrooms was not located, nor were there apparent signs of nest remains (PND 2020).

4.2.1.2 Other Raptors

Other raptors present in the Refuge include northern goshawk (*Accipiter gentilis*), golden eagle (*Aquila chrysaetos*), sharp-shinned hawk (*Accipiter striatus*), red-tailed hawk (*Buteo jamaicensis*), rough-legged hawk (*Buteo lagopus*), northern harrier (*Circus cyaneus*), osprey (*Pandion haliaetus*). (KNWR 2018)

4.2.2 Waterfowl and shorebirds

The Kenai River provides staging, nesting, or feeding habitat for at least 21 waterfowl species. The majority of these species occur in the flats around the lower sections of the river. Goldeneyes and mergansers take advantage of the ice-free stretches between river mile 40 and 82. Trumpeter swans (Cygnus buccinator) utilize the outlet of Skilak Lake, especially during spring staging periods prior to establishing summer territories (KRCMP 1997). A series of Common (*Gavia immer*) and Pacific (*G. pacifica*) loons are frequently sighted in the Upper Kenai River drainage, especially near Skilak Lake. Red-Throated (*G. stellata*) loons are less common, but also present. Sandhill cranes (*Grus canadensis*) are most common in the flats, but are reported in Skilak Lake. (KNWR 2018)

4.2.3 Seabirds

Seabirds are present throughout the Kenai Peninsula but are especially concentrated within the river corridor. Rock islands within Skilak Lake, the outlet of the Snow River (upper Kenai Lake), and Tern Lake each provide seabird nesting sites within the peninsula's interior. The Skilak Lake islands house two rare interior occurrences: a glaucous-winged (*Larus glaucescens*) - herring gull (*Larus argentatus*) hybrid colony and a small double-crested cormorant (*Phalacrocorax auritus*) colony. (KRCMP 1997)

4.2.4 Other birds

Ravens (*Corvus corax*) and magpies (*Pica pica*) are associated with overwintering eagle populations as they scavenge leavings from the larger birds (KRCMP 1997). Gray jays (*Perisoreus canadensis*) and Steller's jays (*Cyanocitta stelleri*) are also commonly reported in the Upper Kenai River, while crows (*Corvus caurinus*) are less common but occasionally present (KNWR 2018).

Spruce grouse (*Falcipennis canadensis*) are frequently reported in the Upper Kenai River drainage, especially north of Skilak Lake. Ptarmigan (*Lagopus sp.*) are more frequently sighted higher in the Chugach Range. (KNWR 2018)

Dark-eyed junco (*Junco hyemalis*), yellow-rumped Warbler (*Setophaga coronate*), orange-crowned warbler (*Vermivora celata*), Swainson's thrush (*Catharus ustulatus*), boreal chickadee (*Poecile hudsonicus*), ruby-crowned kinglet (*Regulus calendula*), gray jay (*Perisoreus canadensis*), alder flycatcher (*Empidonax alnorum*), and American robin (*Turdus migratorius*) are all reported as common breeding birds in Refuge forests. (KNWR 2010)

4.3 Fish

The Kenai River is reported to support 34 fish species, including four non-native species. Twelve species are resident and eleven anadromous, including salmon, Dolly Varden, eulachon, and longfin smelt. Eleven species inhabit marine or brackish environments and are found primarily within the lower delta. (KRCMP 1997)

The 2020 Anadromous Waters Catalog (AWC) reports that the Kenai River (AWC #244-30-10010) is known to support Chinook, sockeye, coho, and pink salmon spawning. Chum salmon, Dolly Varden, lamprey, eulachon, steelhead, whitefish are also reported to be present. Upriver of the project location, Chinook and coho salmon and Dolly Varden are reported to rear. Coho salmon rearing is reported between Jims' Landing and Skilak Lake. Jean Creek supports coho salmon spawning as well as the presence of sockeye salmon and Dolly Varden. (Giefer & Blossom 2020)

4.3.1 Salmonids

The Kenai River supports all five pacific salmon species occurring in North American waters, although chum salmon occur only very rarely. Salmon form four of the River's key economic fisheries, as well as performing a key ecological role as a nutrient source for other wildlife and plants. (KRCMP 1997)

4.3.1.1 Chinook salmon (*Oncorhynchus tshawytscha*)

Chinook (or "king") salmon return to the Kenai River drainage in two distinct spawning runs. An early run (May through late June) returns to spawn primarily in tributaries, including the Russian River, Juneau Creek, and several Kenai Lake tributaries. The late run (late June through August) primarily spawns in the mainstem river above river mile 10 (KRCMP 1997 and Lipka, Gates, & Simons 2020). Rearing Chinook are found throughout the main river and larger tributaries, and juveniles remain in the Kenai River for their first year of development. The areas most heavily used by juveniles are below Skilak Lake in sections where river gradients are reduced and meanders provide more covered bank habitat (KRCMP 1997).

4.3.1.2 Coho salmon (*Oncorhynchus kisutch*)

Like Chinook, coho (or silver) salmon return to the Kenai River in two spawning runs. The early run return in late July and is thought to spawn primarily in tributaries. The late run returns in September to spawn mostly in the mainstem river. Early run cohos spread more widely than Chinook salmon, adding Hidden Creek and Jean Creek to the list of Upper Kenai River tributaries utilized by salmon species. Rearing coho salmon spread the most widely throughout the drainage of any salmon species, using any reach of any tributary not blocked to upstream migration. (KRCMP 1997)

Coho salmon are known to spawn in Jean Creek (AWC 2020)

4.3.1.3 Sockeye salmon (*Oncorhynchus nerka*)

Sockeyes most often spawn in streams containing lakes within their drainages, lake outlets, or inlets within the lakes themselves. In the Upper Kenai River, these include Skilak Lake, Hidden Lake, Jean Lake, Russian Lake, Kenai Lake, Trail Lake, and Tern Lake. Sockeyes remain as juveniles within these lakes for up to two years, with over 70% of the drainage's sockeyes rearing in Skilak Lake. They return to spawn primarily in mid-July through early August. (KRCMP 1997)

The UKRCP requires minimum escapements to be met for sockeye salmon (*Oncorhynchus nerka*) leaving Lower Russian Lake. Closure of the sockeye salmon fishery may result from escapements below minimum standards (UKRCP 1997). The Kenai River Comprehensive Management Plan (KRCMP) recommends that agency enforcement be increased during peak sockeye runs (1997).

4.3.1.4 Pink salmon (*Oncorhynchus gorbuscha*)

Pink (or humpbacked) salmon return in greater numbers in even-numbered years, with small numbers present in odd-numbered years. Spawning in the Upper Kenai River has been observed in the Russian

River and Ptarmigan Creek. Adult salmon have also been observed returning to Quartz Creek and the Trail River drainages. Pink salmon return to the ocean immediately after spawning. (KRCMP 1997)

4.3.1.5 Chum salmon (*Oncorhynchus keta*)

Chum salmon are only rarely observed in the Kenai River (KRCMP 1997).

4.3.1.6 Dolly Varden (*Salvelinus malma*)

Dolly Varden are present throughout the Kenai River drainage, possibly overwintering in Kenai and Skilak Lakes. They spawn in the fall, likely throughout the main stem river and its tributaries (KRCMP 1997). The River is assumed to support both resident and anadromous populations. The anadromous run likely returns to the river in July (Lipka, Gates, and Simons 2020).

The UKRCP requires historic age, size and populations of Dolly Varden to be maintained (UKRCP 1997). Fishing for Dolly Varden is open in much of the river but somewhat restricted in the Upper Kenai River (season and size limits) (Lipka, Gates, and Simons 2020).

4.3.1.7 Rainbow trout and steelhead (*Oncorhynchus mykiss*)

Rainbow trout are present in freshwater drainages throughout southern Alaska as far north as Kuskokwim Bay. Salmonid in form, they have shorter jaws than most salmon and distinct spots on back, sides, and tail. They occur as both resident freshwater and seagoing races (known as steelhead). Freshwater residents display pink stripes that darken during spawning. Individuals typically mature to spawning age at about 6 – 7 and spawn every one to three years up to age 11 (Delaney 2008). Rainbow trout are present throughout the Kenai River drainage (KRCMP 1997).

Spawning of rainbow trout occurs between late March and early July, depending on location and environmental conditions. Eggs are deposited in shallow gravel riverbeds or clearwater tributary streams. Hatching occurs anywhere from a few weeks to four months after spawning, again depending upon environmental conditions. Fry may remain within the gravel for a few more weeks following hatching (Delaney 2008). The Upper Kenai River supports much of the drainage's population, with spawning occurring in the Russian River and Kenai and Trail Lakes drainages, as well as the main stem river between Kenai Lake and Skilak Lake (KRCMP 1997).

Prior to 1998, steelhead were not thought to occur on the Kenai River. However, during a salmon population assessment program conducted between 1998 and 2007, steelhead were captured in the middle river in October. Since then, large trout with steelhead characteristics have been reported by anglers. (Lipka, Gates, & Simons 2020)

In addition to strong salmon fisheries, the Kenai River supports a strong rainbow trout fishery. The fishery has been managed under a variety of strategies with periods of over-fishing reported as early as 1951. The Upper Kenai River has been managed as a trophy fishery since 1988 under the Cook Inlet and Copper River Basin Rainbow/Steelhead Trout Management Policy. (King and Breakfield 2007)

Since 1996, harvest of Kenai Peninsula freshwater rainbow trout has averaged approximately 5.2% of the overall catch (ADF&G 2020). A 2001 survey of the Upper Kenai River population of trout (greater than 200 mm in length) reported increases in of 73% over 14 years, partially attributed to changes in management strategy (King and Breakfield 2007). A repeat of the survey in 2009 reported similar population levels, with the exception that proportional numbers of smaller fish appeared to have

declined (Eskelin and Evans 2013). Preliminary results of a spring 2018 study on the Upper Kenai River suggest populations are healthy with a possible decline in trophy-length fish and a majority of fish showing some form of hooking injury. (A. Eskelin, via Lipka, Gates, & Simons 2020)

The Upper Kenai River Cooperative Plan requires historic age, size and populations of rainbow trout (*Oncorhynchus mykiss*) to be maintained (UKRCP 1997). Fishing for rainbow or steelhead in the Upper Kenai River is limited by season and size.

4.3.2 Other fish

Round whitefish (*Prosopium cylindraceum*) are found throughout the main stem Kenai River and its major lakes, spawning there in the fall.

Eulachon (*Thaleichthys pacificus*) are an anadromous species returning to the river in the spring to spawn along the main stem river (KRCMP 1997).

Lake trout (*Salvelinus namaycush*) spawn and rear in Skilak, Kenai, Hidden, and Trail lakes (KRCMP 1997). Fishing for lake trout in the Upper Kenai River area is limited by season and size.

Arctic char (*Salvelinus alpinus*) are present in lakes throughout western peninsula, but often in deep enough waters that they are not commonly caught by anglers. A possibly endemic subspecies, *Salvelinus alpinus taranetzi* is present in the Refuge (KNWR 2010)

Burbot (*Lota lota*) are found in lakes throughout the Kenai River drainage (Lipka, Gates, & Simons 2020).

Coastrange sculpin (*Cottus aleuticus*), slimy sculpin (*C. cognatus*), threespine stickleback (*Gasterosteus aculeautus*) ninespine stickleback (*Pungitius pungitius*), and longnose sucker (*Catostomus catostomus*) are found throughout the Kenai River drainage. The longnose sucker and sticklebacks spawn in small tributaries and rear in lakes. Coastrange and slimy sculpin are presumed to reproduce in the main stem river (KRCMP 1997). Longnose sucker are present in over 60 lakes within the Refuge, and a possibly endemic semi-dwarf subspecies has been documented in the Finger Lakes (Dean and Rickabaugh 2005, KNWR 2010).

4.4 Amphibians

There is one amphibian species known to be present on the Kenai Peninsula, the wood frog (*Lithobates sylvaticus*) (KNWR 2018). Wood frogs are considered a “species of greatest conservation need” by the State (ADF&G 2015). Increased rates of physical abnormalities have drawn attention to wood frogs as an indicator species for the potential effects of pollution, parasites, or variations in seasonal temperatures (Broderson 2008).

Adult wood frogs inhabit a variety of habitats including mixed forests, open meadows, muskeg, tundra, and or human-landscaped spaces. They are only found in water during breeding and early development, spending the rest of their lives in uplands. In spring, they move from winter hibernation to lakes, ponds, wetlands, or other standing water to begin searching for mates (Broderson 2008). It survives winters on the Peninsula by burrowing into mud that will freeze until spring thaw and by pumping water from cells and organs into extracellular spaces, where it mixes with glucose to form an antifreeze solution (KNWR 2010, Broderson 2008).

4.5 Invertebrates

The UKRCP calls for the following standards to be met as a key indicator of the health of benthic invertebrate populations (and resulting water quality improvements):

- *Less than 15% change in the number of Ephemeroptera, Plecoptera, and Trichoptera (EPT) genera;*
- *Less than 15% decrease in EPT/total genera ratio; and*
- *Less than 15% increase in Bactids/EPT ratio.*

The plan requires sampling to monitor water quality characteristics and invertebrate diversity. If these standards are not met, the plan recommends increasing the frequency of sampling, public education, investigation of pollutant sources, and increases in enforcement and regulation. (UKRCP 1997)

4.6 Species of Concern

A variety of lists of species having especial conservation concern have been developed, including under the Endangered Species Act (ESA), the State's former "Species of Special Concern" list (ADF&G 2015), the USDA's list of "Sensitive Species" in the Chugach National Forest (Goldstein, Martin, and Stensvold 2009), and the Refuge's list of "Species of Special Interest" (KNWR 2010).

There are no ESA-listed species anticipated in the project area. The only Threatened or Endangered species within the Refuge is the Cook Inlet beluga whale (*Delphinapterus leucas*) and, although occasionally seen entering the Kenai River, they are only found well outside of the project area (KNWR 2010). Steller's eider (*Polysticta stelleri*) are found in other parts of the peninsula, but have not been reported in the Refuge and are not expected to occur in the vicinity. Marbled murrelet (*Brachyramphus marmoratus*) are reportedly present within the refuge (KNWR 2018) but are typically found offshore in the Kenai Fjords region (Piatt et al. 2006).

TABLE 4-2. SPECIES OF CONCERN POTENTIALLY PRESENT IN THE PROJECT AREA

Scientific Name	Common Name	Presence in Project Vicinity	Identifying Agency
Accipiter gentilis	Northern goshawk	Regionally and locally rare (KNWR 2010)	Refuge
Brachyramphus brevirostris	Kittlitz's Murrelet	Known to be present in Chugach National Forest (Goldstein, Martin, and Stensvold 2009)	ADF&G
Branta canadensis occidentalis	Dusky Canada goose	Known to be present in Chugach National Forest (Goldstein, Martin, and Stensvold 2009)	USDA
Contopus cooperi	olive-sided flycatcher	Reported throughout the Refuge and relatively common in Upper Skilak Lake (KNWR 2018)	ADF&G
Falco peregrinus anatum	American peregrine falcon	Occasionally sighted in the Refuge, although subspecies has not been reported (KNWR 2018)	ADF&G

Scientific Name	Common Name	Presence in Project Vicinity	Identifying Agency
Haematopus bachmani	Black oystercatcher	Known to be present in Chugach National Forest (Goldstein, Martin, and Stensvold 2009)	ADF&G
Vulpes vulpes kenaiensis	Red fox	Subspecies reported to be extremely rare (KNWR 2010)	Refuge
Martes americana	Marten	Low densities on western peninsula (KNWR 2010)	Refuge
Gulo gulo luscus	Wolverine	Apparent decline (KNWR 2010)	Refuge

4.7 Non-native species

4.7.1 Mammals

Non-native mammals reported in the Refuge include the coyote (*Canis latrans*) and European rabbit (*Oryctolagus cuniculus*) (KNWR 2018).

4.7.2 Birds

Non-native birds reported in the Refuge include the ruffed grouse (*Bonasa umbellus*) and wild turkey (*Meleagris gallopavo*) (KNWR 2018).

4.7.3 Fish

4.7.3.1 Arctic grayling (*Thymallus arcticus*)

Arctic grayling were introduced to Crescent Lake in the 1950s. They have since spread throughout the Upper River and its tributaries and are occasionally caught by anglers. (KRCMP 1997)

4.7.3.2 Northern pike (*Esox lucius*)

Northern pike were introduced to the Soldotna Creek drainage in the mid-1970s (KRCMP 1997). They were believed extirpated within the Refuge until reported in the Miller Creek drainage in late 2018 (KNWR 2018, Massengill, Begich, and Dunker 2020). The infestation is believed confined to Miller Creek, Vogel Lake, and North Vogel Lake and a partnership between ADF&G, USFWS, and the Kenai Watershed Forum has been formed to address the issue.

4.7.3.3 Burbot (*Lota lota*)

Burbot are thought to have been introduced into Juneau Lake and then moved into Skilak Lake via Juneau Creek (KRCMP 1997). They are now believed extirpated within the Refuge (KNWR 2018).

4.7.4 Invertebrates

Known non-native invertebrates include three members of class *Oligochaeta* (worms), one member of class *Arachnida* (spiders), and fifteen members of class *Insecta* (insects) (including sawflies and birch leaf miners) (KNWR 2018).

5 Applicable Regulations

Land, habitat, and wildlife management in the vicinity is a complex mix of state and federal special areas. Uplands in the project area are within KNWR. Submerged lands in the Kenai River are managed by the State as part of the Kenai River Special Management Area (KRSMA). Across the highway is the Mystery Creek Wilderness Area (a KNWR designation) and across the River is the Andrew Simons Wilderness Area.

5.1 Kenai National Wildlife Refuge

Following its establishment as the Kenai National Moose Range in 1941, KNWR was reconfigured in 1980 under the Alaska National Interest Lands Conservation Act (ANILCA) to expand the Refuge and to take on a broader role of protecting and conserving "fish, wildlife, habitat, other resources, and educational and recreational opportunities". The Refuge's goals include providing safe, educational access for visitors while maintaining wilderness resources for future generations. (KNWR 2010, USFWS 2010)

Updated Refuge management policies include the use of prescribed fire, wildfire, and mechanical treatments to improve wildlife habitats, reduce wildland fuels, and maintain or restore natural fire regimes (KNWR 2010)

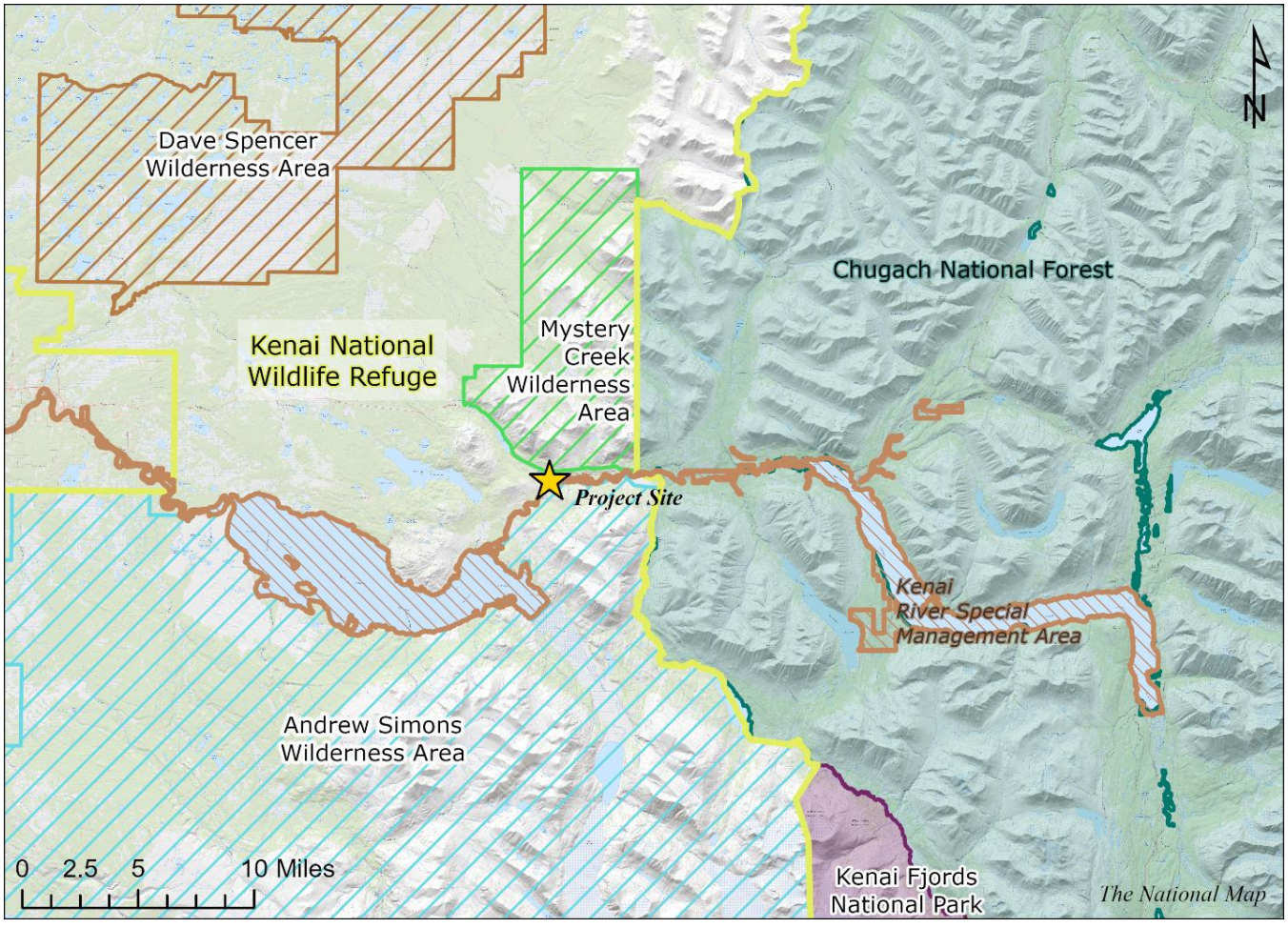

Figure 5-1 Management overview in vicinity (USGS 2020, USFWS 2020, ADNR 2020)

5.1.1 ANILCA

Under the Alaska National Interest Lands Conservation Act (ANILCA), there is a recognition for a need for unique management policies in Alaskan Refuges (1980). ANILCA specifies a conservation purpose in the KNWR for "moose, bears, mountain goats, Dall sheep, wolves and other furbearers, salmonoids and other fish, waterfowl and other migratory and nonmigratory birds" and other unidentified species. ANILCA also emphasizes the need to protect water quality and quantity within the Refuge. Recreation within the Refuge should be compatible with the preceding purposes. (ANILCA 1980)

5.1.2 National Wildlife Refuge System Administration Act

The National Wildlife Refuge System Administration Act (1966 and 1997 Amendments) established management goals and guiding principles for the Refuge (USFWS 2010):

- *Conserve fish, wildlife, and plants, and their habitats within the System*
- *Maintain the biological integrity, diversity, and environmental health of the System*
- *Coordinate, interact, and cooperate with adjacent landowners and State fish and wildlife agencies*
- *Maintain adequate water quantity and water quality to meet refuge and System purposes and acquire necessary water rights*
- *Maintain hunting, fishing, wildlife observation, wildlife photography, interpretation, and environmental education as the priority public uses of the System*
- *Provide opportunities for compatible priority wildlife-dependent public uses within the System*
- *Provide enhanced consideration for priority wildlife-dependent public uses over other public uses in planning and management*
- *Provide increased opportunities for families to experience priority public uses, especially traditional outdoor activities such as fishing and hunting*
- *Monitor the status and trends of fish, wildlife, and plants in each refuge*

5.1.3 Skilak Wildlife Recreation Area

The original 1985 version of the KNWR Comprehensive Conservation Plan directed the establishment of a special management area for wildlife viewing, interpretation, and photography. The Skilak Wildlife Recreation Area was established to meet these needs. The Refuge worked in cooperation with ADF&G and the State Board of Game to develop consistent policies to align with the State's designation of a Skilak Loop Wildlife Management Area (KNWR 2007).

5.2 Memorandum of Agreement

In 1982, the Service, the State, and ADF&G signed a Memorandum of Agreement regarding the management of fish and wildlife resources and public lands within Alaska. Under the agreement, USFWS takes responsibility for the management of migratory birds, endangered species, and conservation of fish and wildlife on Service lands. The State agreed to manage fish and wildlife resources for natural species diversity and consult with the Service regarding improvements on Service lands. The Service recognized ADF&G as the agency with primary fish and wildlife management responsibility in the State and the right of ADF&G to enter Service lands to conduct routine resource management. (USFWS. 2010)

5.3 Upper Kenai River Cooperative Plan

The UKRCP is a shared planning effort between the Chugach National Forest, KNWR, Alaska Department of Natural Resources (ADNR) Division of Parks and Outdoor Recreation (DPOR), ADF&G, Kenai Peninsula Borough (KPB), Cook Inlet Region, Inc., local residents, and stakeholders interested in the upper Kenai River corridor. (UKRCP 1997)

The UKRCP addresses a management of change process for public lands and waters within 1/4 mile of the Kenai and Russian Rivers between Kenai, Lower Russian, and Skilak Lakes. For any future alterations of conditions that exceed parameters outlined in the plan, adaptive responses have been outlined as well as monitoring strategies. Key conditions include water quality, healthy fisheries, minimization of impacts to riparian areas, public access to recreation and wilderness experience, and a balance of commercial and noncommercial use. (UKRCP 1997)

The UKRCP and the State Riparian Habitat Fishery Management Plan (RHFMP) allow for restrictions of the sockeye salmon fishery if it is likely to result in habitat loss along the Kenai River (UKRCP 1997).

5.4 State of Alaska Management Areas

KNWR lands are contained within State GMUs 7, 15A, 15B, and 15C (USFWS 2010). The project site is within GMU 15A and the Skilak Loop Wildlife Management Area, described in Alaska Administrative Code (AAC) *Title 5 Fish and Game, Section 92.530 Management areas*.

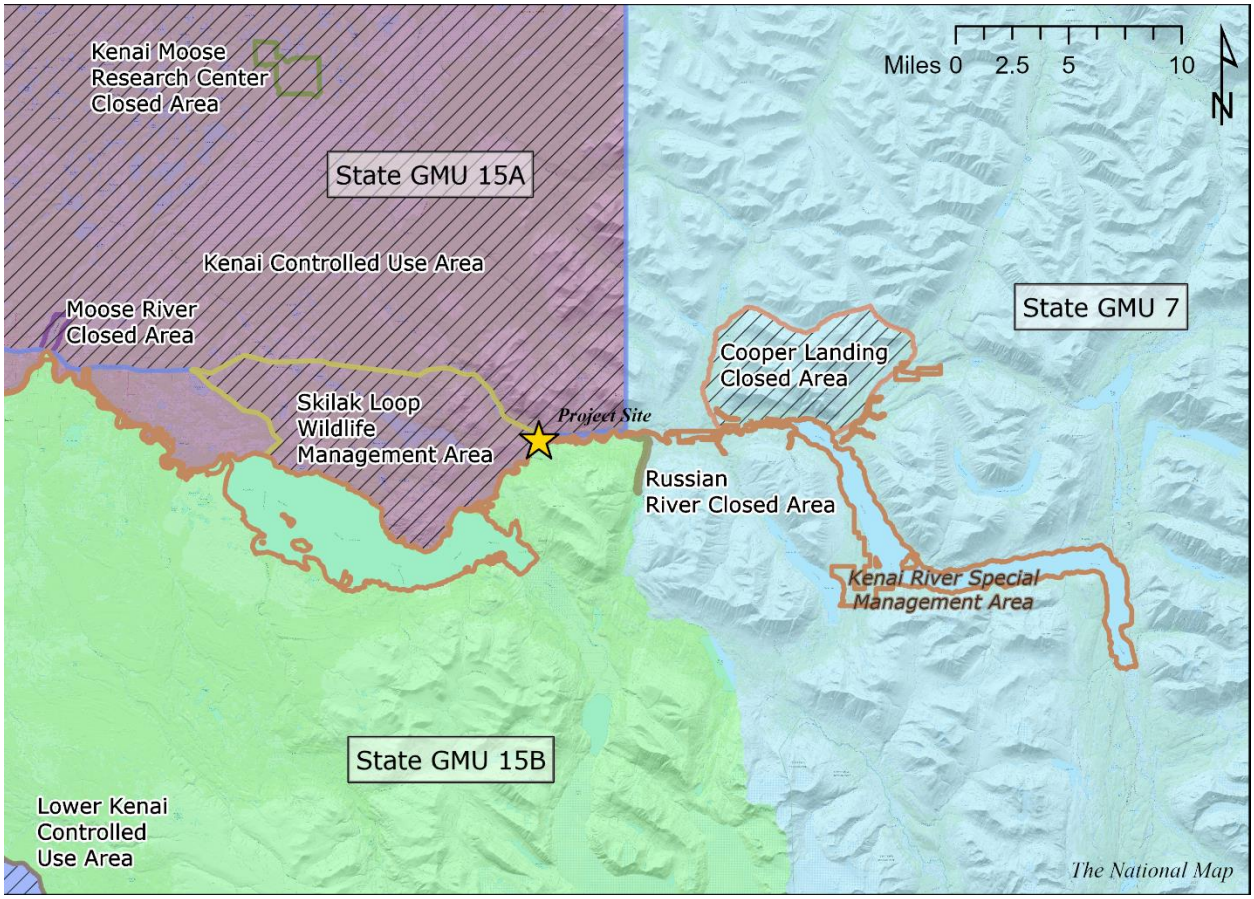

Figure 5-2 State management units in vicinity (USGS 2020, ADNR 2020)

5.4.1 Skilak Loop Wildlife Management Area

Skilak Loop Wildlife Management Area covers the area between Skilak Lake and the Sterling Highway, as shown in Figure 5-2. The area is closed to hunting and trapping, except for moose hunts by permit, winter bow-hunting, youth hunts, or winter hunts of wolf, coyote, and lynx at least ¼ mile from campgrounds or boat launches. (5 AAC 92.530(6))

5.4.2 Kenai River Special Management Area

The KRSMA was established by Alaska Statute (AS) to designate specified uplands, tidelands, and submerged lands as a special purpose area. This includes all submerged lands within the project area. The statute closes the area to mineral development, establishes an advisory board, and requires a comprehensive management plan to be developed in cooperation with KPB (AS 41.21.500-514). Submerged lands within KRSMA are managed by DPOR.

5.4.2.1 Kenai River Comprehensive Management Plan

The KRCMP was mandated by A.S. 42.21.506 as part of the establishment of KRSMA. It was initially developed by ADNR, ADF&G, and KPB in 1985 and revised in 1996 and is overseen by the Kenai River Advisory Board. The purpose of the plan is to guide State agency decision-making and regulations regarding management of State lands and resources within the KRSMA. The plan describes wildlife resources and habitats and the effects of human activities on those resources as well as outlining recommendations and goals to protect them. The recommendations of the UKRCP (a coordinated planning effort between State and Federal Agencies) are incorporated in the KRCMP. (KRCMP 1997)

In the Upper Kenai River, the KRCMP recommends leveraging land ownership differences to relieve development pressure. The existing management structure allows for the limiting of access and activities in some cases. The Skilak Lake area contains some existing private inholdings, but is primarily suited for low-intensity boating, fishing, and camping uses. The section of the Kenai River between Skilak Lake and Kenai Lake will have limitations on vessel-based fishing, float trips, and development outside the Cooper Landing section. Plans for the Kenai Lake area allow for the encouragement of limited recreational and commercial development with a focus on facilities that "support the recreational activities of Kenai Lake and serve the traveling public". Appendix C of the KRCMP lists structures and uses and their compatibility with different sections of the River as well as identifying the agencies with jurisdiction over the activities and special conditions for the listed activities. (KRCMP 1997)

5.4.3 Riparian Habitat Fishery Management Plan for the Kenai River Habitat Area

The RHFMP was established to address the potential negative impacts to riparian habitat (and resulting degradation of water quality and fish habitat) arising from heavy use of freshwater fisheries. The plan authorizes the closure of riparian areas (within ten feet of the waterline) on state, federal, or municipal lands to fishing on an emergency basis. Additionally, the plan mandates seasonal fishing closures for certain high-priority or especially vulnerable sections of riverbank, including the area adjacent to Jims' Landing "from an ADF&G regulatory marker located at the large rock at river mile 69.7 to an ADF&G regulatory marker located just downstream from the boat launch". (5 AAC 57.180)

5.5 KPB Anadromous Waters and Riparian Habitat Protection

KPB protects all lands within 50 feet of the ordinary high water mark of anadromous streams (as catalogued by ADF&G) from the negative effects of "removal of near shore native vegetation, bank erosion, bank trampling, pollution, inadequate tourism infrastructure, unsuccessful attempts to remedy bank erosion or protect and restore habitat, inconsistent regulations and enforcement, logging, grazing, mining, wetland fill and drainage, excavation and fill of property, dredging, inappropriately installed culverts, fuel storage, and maintenance of existing structures". (KPB 1996)

Conditional Use Permits are required for "public-owned facilities, parks, campgrounds, and their related uses and structures" or "transportation and utility infrastructure". In addition to other measures, the permit would likely require that "the use or structure will not cause significant erosion, sedimentation, damage to the habitat protection district, an increase in ground or surface water pollution, and damage to riparian wetlands and riparian ecosystems". (KPB 1996)

6 References

ADF&G. 2015. 2015 Alaska Wildlife Action Plan. Juneau, AK: Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static/species/wildlife_action_plan/2015_alaska_wildlife_action_plan.pdf

———. 2017. The Status of Mountain Goat and Factors Influencing Their Populations. Annual Performance Report 1 July 2016-30 June 2017. Federal Aid in Wildlife Restoration Project. Juneau, AK: Alaska Department of Fish and Game, Division of Wildlife Conservation. http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.wildlifepublicationsdetails&pubidentifier=5398.

———. 2020. Alaska Sport Fishing Survey. Southcentral Alaska Region Species Summary. 1996 – 2019. http://www.adfg.alaska.gov/sf/sfpublic/sportfishingsurvey/

ADNR. 2020. Alaska Department of Natural Resources ArcGIS REST Services Directory. https://arcgis.dnr.alaska.gov/arcgis/services.

ANILCA. 1980. Alaska National Interest Lands Conservation Act. U.S. Congress. Public Law 96–487. December 2, 1980. https://www.nps.gov/locations/alaska/upload/ANILCA-Electronic-Version.PDF.

AWC. Giefer, J., and B. Blossom. 2020. Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Southcentral Region, Effective June 1, 2020. Special Publication 20–03. Anchorage, AK: Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static-sf/AWC/PDFs/2020scn_CATALOG.pdf.

Broderson, K. 2008. Frogs and Toads. Wildlife Notebook Series. Alaska Department of Fish & Game. http://www.adfg.alaska.gov/static/education/wns/frogs_and_toads.pdf.

Burns, J. 2008. Mink. Wildlife Notebook Series. Alaska Department of Fish & Game. http://www.adfg.alaska.gov/static/education/wns/mink.pdf.

Cornelius, D., and H. Golden. 2007. Coyote. Wildlife Notebook Series. Alaska Department of Fish & Game. http://www.adfg.alaska.gov/static/education/wns/coyote.pdf.

Dean, J. L., and S. Rickabaugh. 2005. Comparison of Two Forms of Longnose Suckers on the Kenai National Wildlife Refuge, Alaska. Alaska Fisheries Data Series 2005–000. Soldotna, AK: U.S.

Department of the Interior, Fish & Wildlife Service. https://www.fws.gov/uploadedFiles/Dean_JL_and_S_Rickabough_2005.pdf.

Delaney, K. 2008. Rainbow Trout. Wildlife Notebook Series. Alaska Department of Fish & Game. http://www.adfg.alaska.gov/static/education/wns/rainbow_trout.pdf.

Eide, S., and S. Miller. 2008. Brown Bear. Wildlife Notebook Series. Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static/education/wns/brown_bear.pdf.

Eskelin, T., and D. Evans. 2013. Stock Assessment of Rainbow Trout in the Upper Kenai River, Alaska, 2009. Fishery Data Series 13–16. Soldotna, AK: Alaska Department of Fish & Game. http://www.adfg.alaska.gov/FedAidPDFs/FDS13-16.pdf.

FHWA & AKDOT&PF. 2018. Sterling Highway MP 45-60 Project Final EIS and Final Section 4(f) Evaluation. Anchorage, AK: U.S. Department of Transportation, Federal Highway Administration and State of Alaska Department of Transportation and Public Facilities. https://www.sterlinghighway.net/documents.html.

Friedersdorff, J. W., and W. J. Jakubas. 1984. Remote and Roadside Lake Study, 1983, Volume I. Interim Project Report. Kenai Fishery Resources Field Station. Kenai, AK: U.S. Department of the Interior, Fish & Wildlife Service. http://ecos.fws.gov/ServCatFiles/reference/holding/2361.

Goldstein, M. I., D. Martin, and M. C. Stensvold. 2009. 2009 Forest Service Alaska Region Sensitive Species List. Assessment and Proposed Revisions to the 2002 List. U.S. Department of Agriculture, Forest Service, Alaska Region. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_031979.pdf.

Gotthardt, T. A. 2005. Wood Frog. Life History. Alaska Natural Heritage Program. http://www.adfg.alaska.gov/static/species/speciesinfo/_aknhp/Wood_Frog.pdf.

Gotthardt, T. A., J. G. McClory, A. Jansen, and C. B. Heaton. 2006. Ermine. Life History. Alaska Natural Heritage Program. http://www.adfg.alaska.gov/static/species/speciesinfo/_aknhp/Ermine.pdf.

Herreman, J. 2015. Moose Management Report and Plan, Game Management Unit 15: Report Period 1 July 2010–30 June 2015, and Plan Period 1 July 2015–30 June 2020. Species Management Report and Plan ADF&G/DWC/SMR&P–2018–13. Alaska Department of Fish & Game, Division of Wildlife Conservation.

———. 2020. Furbearer Management Report and Plan, Game Management Units 7 and 15. Species Management Report and Plan ADF&G/DWC/SMR&P-2020-18. Juneau, AK: Alaska Department of Fish and Game, Division of Wildlife Conservation. https://www.adfg.alaska.gov/static/research/wildlife/speciesmanagementreports/pdfs/furbearer_2012_2022_smr_gmu_7_15.pdf.

Jennings, L. 2008. Red Fox. Wildlife Notebook Series. Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static/education/wns/red_fox.pdf.

Johnson, L. 2008a. Black Bear. Wildlife Notebook Series. Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static/education/wns/black_bear.pdf.

———. 2008b. Mountain Goat. Wildlife Notebook Series. Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static/education/wns/mountain_goat.pdf.

Jozwiak, L. 1999. Wolves on the Kenai National Wildlife Refuge. Refuge Notebook, December 3, 1999. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/Sections/What_We_Do/In_The_Community/Refuge_Notebooks/1999_Articles/Refuge_Notebook_v1_n37.pdf

———. 2010. Now and then: The history of red fox on the Kenai Peninsula. Refuge Notebook October 10, 2010. https://www.fws.gov/refuge/Keani/community/2010_article/10012010.html

KNWR. 2007. Skilak Wildlife Recreation Area Revised Final Management Plan. Soldotna, AK: U.S. Department of the Interior, U.S. Fish & Wildlife Service, Kenai National Wildlife Refuge. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/skilak_revised.pdf.

———. 2010. Comprehensive Conservation Plan. Soldotna, AK: U.S. Department of the Interior, U.S. Fish & Wildlife Service. Kenai National Wildlife Refuge. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/USFWS_2010_Kenai_CCP.pdf.

———. 2016. Kenai Peninsula 2016 Aerial Imagery. From Kenai Peninsula Topography using Structure from Motion. https://eros.usgs.gov/doi-remote-sensing-activities/2017/fws/kenai-peninsula-topography-using-structure-motion. Data accessed 2020 via KPB server https://maps.kpb.us/gis/services

———. 2018. Kenai National Wildlife Refuge Species List. Soldotna, AK: U.S. Department of the Interior, Fish & Wildlife Service.

KPB. 1996. Kenai Peninsula Borough. Chapter 21.18. - Anadromous Waters Habitat Protection. Code of Ordinances. https://library.municode.com/ak/kenai_peninsula_borough/codes/code_of_ordinances?nodeId=TIT21ZO_CH21.18ANWAHAPR#TOPTITLE.

———. 2020. Kenai Peninsula Borough ArcGIS REST Services Directory. https://maps.kpb.us/gis/services

KRCMP. 1997. Kenai River Comprehensive Management Plan. Kenai, AK: Alaska Department of Natural Resources, Division of Parks & Outdoor Recreation; Alaska Department of Fish & Game, Habitat & Restoration Division; and Kenai Peninsula Borough. http://dnr.alaska.gov/parks/plans/krsmapln/krsmamp3.pdf.

King, B. E., and J. A. Breakfield. 2007. Stock Assessment of Rainbow Trout in the Upper Kenai River, Alaska, in 2001. Fishery Data Series No. 07-14. Anchorage, AK: Alaska Department of Fish and Game. http://www.adfg.alaska.gov/FedAidpdfs/fds07-14.pdf.

Lipka, C. G., J. L. Gates, and S. K. Simons. 2020. Sport Fisheries of the Northern Kenai Peninsula Management Area, 2016–2018, with Overview for 2019. Fishery Management Report 20–01. Soldotna, AK: Alaska Department of Fish & Game. http://www.adfg.alaska.gov/FedAidPDFs/FMR20-01.pdf.

Massengill, R., R. N. Begich, and K. Dunker. 2020. Operational Plan: Kenai Peninsula Nonnative Fish Control, Monitoring, and Native Fish Restoration. Regional Operational Plan SF.2A.2020.18. Anchorage, AK: Alaska Department of Fish & Game, Division of Sport Fish and Commercial Fisheries. http://www.adfg.alaska.gov/FedAidPDFs/ROP.SF.2A.2020.18.pdf.

McDonough, T. J., and L. E. Olson. 2009. First Record of a Least Weasel, Mustela Nivalis, on the Kenai Peninsula, Alaska. Northwestern Naturalist 90 ((3)): 256–58. http://dx.doi.org/10.1898/NWN09-02.1.

Morton, J. M., D. P. Coleman, K. Schake, J. Blackwell, B. Bornemann, K. Graham, J. Hester, et al. 2019. Integrated Pest Management Plan for Eradicating Elodea from the Kenai Peninsula. Kenai Peninsula Cooperative Weed Management Area. http://www.kenaiweeds.org/user_images/Integrated%20Pest%20Management%20Plan%20for%20Eradicating%20Elodea_ver6.1_noAppendices.pdf.

Naske, C.-M. 1980. The Kenai National Moose Range. University of Alaska, Department of History. https://ecos.fws.gov/ServCat/Reference/Profile/2359.

Olson, S. T. 2008. Dall Sheep. Wildlife Notebook Series. Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static/education/wns/dall_sheep.pdf.

Piatt, J. F., K. J. Kuletz, A. E. Burger, S. A. Hatch, V. L. Friesen, T. P. Birt, M. L. Arimitsu, G. S. Drew, A. M. A. Harding, and K. S. Bixler. 2006. Status Review of the Marbled Murrelet in Alaska and British Columbia 2006. Open File Report 2006–1387. U.S. Geological Survey. https://www.fws.gov/wafwo/species/Fact%20sheets/Status%20Review%20of%20the%20Marbled%20Murrelet%20in%20Alaska%20and%20British%20Columbia%202006.pdf.

Rausch, R. A., B. Gasaway, and C. Schwartz. 2008. Moose. Wildlife Notebook Series. Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static/education/wns/moose.pdf.

Rozdilsky, J. 1989. UWBM Mammalogy Collection (Arctos). University of Washington Burke Museum. Catalogued in 2017. Records 39489 and 39490 at https://www.burkemuseum.org/collections-and-research/biology/mammalogy. Accessed February, 2021.

Shepherd, P., and H. Melchior. 2008. Marten. Wildlife Notebook Series. Alaska Department of Fish & Game. http://www.adfg.alaska.gov/static/education/wns/marten.pdf.

Stephenson, B., and R. Boertje. 2008. Wolf. Wildlife Notebook Series. Alaska Department of Fish & Game. http://www.adfg.alaska.gov/static/education/wns/wolf.pdf.

UKRCP. 1997. Upper Kenai River Cooperative Plan. Alaska Department of Natural Resources, Alaska Department of Fish & Game, U.S. Forest Service, and U.S. Fish & Wildlife Service. https://www.fws.gov/uploadedFiles/UpperKenaiRiverCoop_Plan_1997.pdf.

USFWS. 2006. Peregrine Falcon (*Falco Peregrinus*). U.S. Department of the Interior, Fish & Wildlife Service. https://www.fws.gov/endangered/esa-library/pdf/Peregrinefactsheet.pdf.

———. 2010. Comprehensive Conservation Plan. 2010. Soldotna, AK: U.S. Department of the Interior, Fish & Wildlife Service, Kenai National Wildlife Refuge. https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kenai/PDF/USFWS_2010_Kenai_CCP.pdf.

———. 2020. U.S. Fish & Wildlife Service ArcGIS REST Services Directory. R7 Realty layers. Accessed November, 2020. https://services.arcgis.com/QVENGdaPbd4LUkLV/ArcGIS/rest/services

USGS. 2020. The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020

Valkenburg, P. 2008. Caribou. Wildlife Notebook Series. Alaska Department of Fish & Game. https://www.adfg.alaska.gov/static/education/wns/caribou.pdf.

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Appendix 4 Visual Resources (Scenery) Report

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AUGUST 6, 2021

JIMS' LANDING BOAT LAUNCH ACCESS AND PARKING IMPROVEMENTS

Kenai National Wildlife Refuge

Scenery Resources Report

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Abbreviations

AK	Alaska
CNF	Chugach National Forest
CNF Plan	Chugach National Forest Land Management Plan, 2020
EIS	Environmental Impact Statement
FSM	Forest Service Manual
KNWR	Kenai National Wildlife Refuge
NEPA	National Environmental Policy Act
MA	Management Area
No.	Number
SIO	Scenic Integrity Objective
U.S.	United States
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

Introduction

The Scenery Resources Report describes scenic impacts on existing conditions in the area surrounding Jims' Landing due to the proposed boat launch access and parking Improvements. Jims' Landing Boat Launch is located within the Skilak Wildlife Recreation Area (SWRA), a component of the larger Kenai National Wildlife Refuge (KNWR), and west of Cooper Landing, Alaska. The U.S. Fish and Wildlife Service (USFWS) prepared the Scenery Resources Report in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. Two alternatives, plus a no action alternative, are considered for development at the Jims' Landing Boat Launch. Disclosed in this report are the direct, indirect, and cumulative effects the three alternatives will have on the scenery.

Proposed Actions

The U.S. Fish and Wildlife Service (USFWS) has identified a need for improvements to the existing boat launch and parking to address public access and public safety deficiencies. The project is currently in design with two alternatives that address the project scope for a new boat launch and related facilities. Both alternatives include improvements to the boat launch, parking, and vehicular circulation. Alternative A has the smallest area of development of the two. Alternative B has the largest area of development to accommodate the most parking and ease of vehicle circulation. Both alternatives include two options for off-site parking (Off-Site Parking Options 1 and 2).

Alternative A will include hardening and improving the existing boat launch, widening to two lanes and expanding on either side to accommodate tie up space for four boats. The parking area is expanded to accommodate 49 vehicles, vehicle circulation is improved, and the vault toilet remains in its current location. Alternative B will include hardening and improving the existing boat launch, widening to two lanes and expanding on either side to accommodate tie up space for four boats. The parking area is expanded to accommodate 58 vehicles, vehicle circulation is improved, pedestrian circulation is separated from vehicles, and the vault toilet is relocated. For both alternatives, a large percentage of the existing vegetation will remain along the shoreline, entrance to the facility from Skilak Lake Road, and surrounding developed areas. Relocating the vault toilet will be the only vertical improvement associated with the Proposed Actions. Two off-site parking lots off Skilak Lake Road are being considered for both alternatives. Option 1 is on the south side of Skilak Lake Road for 24 vehicles with trailers, and Option 2 is on the north side of Skilak Lake Road for 25 vehicles with trailers. The location of the Proposed Action is shown on Figure 4: Common Viewing Locations.

Scope and Area of Analysis

The purpose of the Scenery Resources Report is to identify existing general conditions for scenery or visual resources in the area surrounding Jims' Landing Boat Launch (referred to as the analysis area). The analysis area is the combined area of existing and proposed facilities identified in the Proposed Action. Assumptions have been made in regards to the visibility of the site from adjacent common viewing locations.

Methodology

The USFWS currently does not have its own agency's methodology for visual or scenery impact evaluation and analysis of a Proposed Action and in compliance with NEPA. Neither the Kenai National Wildlife Refuge Comprehensive Conservation Plan (2010) nor the Skilak Wildlife Recreation Area Revised Final Management Plan (2007) provides any management guidelines or requirements related to the scenery.

The USFWS provided direction that the Scenery Resources Report will be conducted through the use of the U.S. Forest Service (USFS) Chugach National Forest Land Management Plan (CNF Plan) and the USFS Handbook for Scenery Management (USFS Handbook) as guiding documents. The USFS Scenery Management Handbook is a nationally recognized and accepted methodology for evaluating and analyzing scenery resources. The Jims' Landing Boat Launch is located four miles from the Chugach National Forest (CNF). It has similar recreation use, landscape characteristics, and scenery as those found in the adjacent portion of the National Forest (See Appendix, Figure 1: Vicinity Map).

The USFS methodology for scenery resources includes an inventory of the project area, and the evaluation of the Proposed Action for potential impacts on the existing scenery (visual) resources. The framework for the evaluation of scenery resources includes three phases: 1) inventory, 2) develop management standards, and 3) determine the Proposed Action's effects on scenery. The methodology for evaluating the scenery resources is found in the USFS Handbook for Scenery Management (USFS, 1996), and the management standards of the resource is set in the Chugach National Forest Land Management Plan (USFS, 2020).

Scenery mapping and management guidelines found within the CNF Plan was applied to the Jims' Landing Boat Launch Access and Parking Improvements where similar landscape, scenery, and management are applicable. Due to the proximity of the CNF, the site easily translates to developing USFS requirements and guidelines for scenery and applying the USFS's scenery methodology.

At the direction of the USFWS, there is no existing scenery inventory associated with this work, nor the development of scenery management standards. The Scenery Resources Report applies the appropriate USFS and CNF management standards and determines the Proposed Action's effects on scenery.

The application of CNF and USFS scenery management to the site and potential project-related effects were evaluated using best professional judgment to conceptually determine the expected visual impacts to the existing landscape and whether these impacts are consistent with USFS scenery guidelines and requirements.

Affected Environment

Introduction

The visual analysis area is located off the Sterling Highway (AK-1), 10.1 miles west of Cooper Landing, Alaska, on Skilak Lake Road near the highway intersection. The Proposed Action is accessed from Skilak Lake Road to the north and the Kenai River that runs south of the analysis area. The analysis area is near the eastern boundary of the SWRA, within the larger KNWR.

The Skilak Wildlife Recreation Area Management Plan (2007) identifies the area as part of the Kenai Mountains within the larger Chugach-St. Elias Mountains ecoregion, with the Kenai Mountains rising to 3,000 feet. The vegetation within this area is an intermediate aged 'closed mixed forest' of evergreen and deciduous trees of white spruce (*Picea glauca*), black spruce (*Picea mariana*), quaking aspen (*Populus tremuloides*), and paper birch (*Betula papyrifera*). The Kenai River is a popular boating and angling route during the summer.

Common Viewing Locations

The CNF Plan has identified common viewing locations from which a casual observer may gain visual or physical access to a site. These locations include hiking trails, public use roads, navigable water bodies, communities, and recreation areas. (See Appendix, Figure 4: Common Viewing Locations).

The analysis area is visible from the following common viewing locations:

- *Kenai River;*
- *Skilak Lake Road; and,*
- *Sterling Highway.*

Landscape Visibility

Landscape visibility is based on the distance of the landscape from the viewer along a common viewing location. Distance is subdivided into the following zones:

Foreground (up to 1/2 mile from the viewer)

- *Middleground (1/2 to 5 miles from the viewer)*
- *Background (5 miles from the view to the horizon)*

The visual analysis area is primarily visible in the foreground (up to 1/2 mile from the viewer), where individual elements can be easily perceived. The Proposed Action is within the foreground distance zone from all common viewing locations due to the terrain and density of the existing forested vegetation and canopy, preventing longer distance viewing.

Management

This phase references the established guidelines, goals, and objectives to set standards and thresholds for acceptable levels of modifications to the scenery. While the USFWS does not have established scenery guidelines, goals, and objectives, the USFS has established scenery guidelines for the Chugach National Forest, four miles from the analysis area. The following outlines assumptions when transferring the USFS scenery management to the analysis area. These come from the CNF Plan.

Forestwide

(FW-SCEN-S): Standard: “New management actions and authorized activities shall be consistent with mapped scenic integrity objectives and shall integrate the protection of aesthetic values with all resource planning. Areas of nonconformance caused by management activities are permissible as described in the forestwide scenic resources guidelines, or as identified in the management area scenery standards and guidelines.” (USFS, 2020, page 48).

(FW-SCEN-G) Guideline: “Deviations from the mapped scenic integrity objective may be allowed cumulatively (including past and present projects) for up to 10 percent of the seen area (acres) from identified viewing locations (trails, roads, developed recreation sites, marine waters, shorelines, lakes, and rivers), but the impact must not result in a lower scenic integrity level than the range displayed in Table 9 for the management area. Deviations from scenic integrity objectives are allowed for unseen or seldom seen areas, but in no case may the effects of an activity be less than the lowest scenic integrity objective permitted in the range in Table 9 for the management area.” (USFS, 2020, page 48).

Special Areas Direction

USFS lands adjacent to the analysis area are not within a Special Area as listed in the CNF Plan (page 56-60) and therefore there are no additional scenery objectives, management, standards, or guidelines.

Geographic Area Direction

USFS lands adjacent to the analysis area is within the Kenai Peninsula Geographic Area (GAKP), CNF Plan (page 63-64). There are no associated additional scenery objectives, standards, or guidelines.

Management Areas Direction

USFS lands adjacent to the analysis area are within Management Area No. 8: Front Country as defined in the CNF Plan and are listed on Map 13-Management Areas (See Appendix, Figure 2: Management Areas). The landscape within this management area is consistent with the analysis area in landscape character (terrain, natural features, vegetation), man-made features (roads, trails, recreation facilities) and is associated with the Sterling Highway and Kenai River corridor that transits the Chugach National Forest and can be perceived to continue into the Kenai National Wildlife Refuge. The Front Country management area consist of, "high density of human activities and associated structures, including roads, utilities, and trails. Scenery may exhibit evidence of past and ongoing vegetation management activities. This management area provides a wide variety of opportunities including both recreation and subsistence, both for motor vehicles and non-motorized uses." (CNF Plan, 2020, page 91).

The Front Country management area lists the following guideline related to scenery: (MA8-G) Guideline: "Areas of non-conformance with the forestwide scenery guideline may be allowed if no other alternative is feasible for the planned activity, but may not result in a scenic integrity level lower than a low scenic integrity objective. Mitigation should be included to reduce effects from management activities on the seen landscape from common viewing locations (trails, roads, recreation sites, marine waters, shorelines, lakes, and rivers) to the greatest extent practicable." (CNF Plan, 2020, page 92).

Management Objectives

Scenic Integrity Objectives (SIOs) are used to establish the degree to which the landscape may be perceived as modified by human activities (USFS, 1974; USFS, 1995). SIOs were adopted in the CNF Plan and are included in Map 20-Scenic Integrity Objectives. These objectives provide direction for landscape scenery management (CNF Plan, 2020, Glossary) and are established by the management area. The applicable scenery objectives for USFS lands adjacent to the analysis area include:

- ***High (H) SIO*** *- Human activities are not visually evident to the casual observer. Activities may only repeat attributes of form, line, color, and texture found in the existing landscape character.*
- ***Moderate (M) SIO*** *- Landscapes appear slightly altered. Noticeable human-created deviations must remain visually subordinate to the landscape character being viewed.*
- ***Low (L) SIO*** *- Landscapes appear moderately altered. Human created deviations begin to dominate the valued landscape character being viewed but borrow from valued attributes such as size, shape, edge effect, and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed.*

The existing scenic character of the Project Area from the three common viewing locations are:

- *Kenai River:* Scenery equivalent to a Moderate SIO;
- *Skilak Lake Road:* Scenery equivalent to a Moderate SIO; and,
- *Sterling Highway.* Scenery equivalent to a High SIO.

Scenery Effects

Effects Under The No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur, and there would be continued use of the existing Jims' Landing Boat Launch as is. There will be no or very limited new visual effects within the analysis area. The analysis area is viewed as foreground from all common viewing locations.

Kenai River

Deterioration of the riparian habitat and reduction of the existing shoreline vegetation may result from unintended use of the boat launch facilities while accessing the Kenai River. As shoreline vegetation is impacted, views from the river to the parking lot may result in more visual impacts or noticeable human-created deviations on the landscape. Visual impacts are expected to be limited to the boat launch area. It is likely that the existing conditions and any future impacts under the No Action Alternative will have a scenery effect equivalent to a Moderate SIO and therefore meet the applicable scenery management objective.

Skilak Lake Road

The current facility does not meet launch and parking demands, deteriorating the uplands and existing vegetation adjacent to parking areas. Visual impacts are expected to be minimal. Riparian impacts will not be visible from Skilak Lake Road. It is likely that the existing conditions and any future impacts under the no action alternative will have a scenery effect equivalent to a Moderate SIO from this viewing location and therefore meet the applicable scenery management objective.

Sterling Highway

The existing natural vegetation along the Sterling Highway and Skilak Lake Road screens the analysis area. Limited short duration viewing may be possible of Jims' Landing Road. It is expected that the existing conditions and any future impacts under the No Action Alternative will have a scenery effect equivalent to a High SIO from this viewing location and therefore meet the applicable scenery management objective.

Effects Under The Proposed Action

The following expected effects under the Proposed Actions are based on best professional judgment. The two Proposed Actions will be viewed as foreground from all common viewing locations.

Alternative A, with Options 1 & 2 Off-Site Parking

Kenai River

The Kenai River is a swift and popular recreational boating and angling route that passes immediately to the south of the Proposed Action. Alternative A is similar in its driveway and parking layout as the No Action Alternative but with improved facilities. The improved boat launch structure and parking immediately adjacent to the boat launch are visible on the river. Due to river currents and the relatively unimpacted existing vegetation buffer between the river and parking lot, it is anticipated that the boat launch facility will be visible for only a short duration (less than 3 minutes). Other parking areas along the river will be visible through filtered views of the existing riparian vegetation (shrubs and deciduous

and coniferous trees) along the entire length of the shoreline. Taller vehicles in the parking lot may extend above the existing vegetation or be more evident through filtered views. It is expected that glint, a momentary flash of light from a reflective surface, may occur from a parked vehicle's windshield on sunny days.

During the winter, it is likely that the impacted areas will be more visible from the river due to loss of leaf cover in the vegetated buffer. There will be minimal river traffic in winter, and the facility may be closed seasonally to prevent access and use, therefore reducing visual impacts from parked vehicles. All other Alternative A and off-site parking facilities are expected to remain unseen from the Kenai River. It is anticipated that Alternative A, with Options 1 and 2 Off-Site Parking, as seen from the Kenai River, will have a scenery effect equivalent to a Moderate SIO and therefore meet the applicable scenery management objective.

Skilak Lake Road

Skilak Lake Road is a paved, two-lane road, turning to gravel shortly after Jims' Landing Road and runs to the north of Alternative A and Option 1 Off-Site Parking. Option 2 Off-Site Parking is located north of Skilak Lake Road.

The speed limit on Skilak Lake Road is 35 miles per hour, and Jims' Landing Road is located after a sharp curve. Based on travel speed and limited time before passing the road, views from a vehicle into the site with the Proposed Action will occur over a short time frame. The facility sign at the intersection of Skilak Lake Road and Jims' Landing Road will be viewed for a short time.

To the east of Jims' Landing Road is a heavily wooded forest with views into the site expected to be minimal. To the west, filtered views of Option 1 and 2 Off-Site Parking may occur through the existing tree and shrub vegetation along Skilak Lake Road. Both Option 1 and 2 Off-Site Parking sites are located over 60 feet from Skilak Lake Road. The preserved native vegetation buffer the lots and are comprised of trees (coniferous and deciduous) and shrubs. It is expected that the access to each will be viewed for a short time from Skilak Lake Road as they intersect the road at a right angle. The Option 1 Off-Site Parking area is buffered by a parking island located near the driveway entrance. The island will protect and retain existing native trees and shrubs, minimizing views of the lot. Option 2 Off-Site Parking has a curved layout for both the driveway and parking lot, reducing views into the lot as short duration. For all parking areas, taller vehicles may extend above the existing vegetation or be more evident through filtered views. On sunny days, it is expected that glint may occur from a parked vehicle's windshield.

During the winter, it is likely that the analysis area will be more visible from the road due to loss of leaf cover by existing vegetation. The facility may be closed seasonally to prevent access and use and reduce visual impacts from parked vehicles. All facilities adjacent to the Kenai River are expected to remain unseen from Skilak Lake Road. It is expected that all facilities in Alternative A, with Options 1 and 2 Off-Site Parking, as seen from Skilak Lake Road, will have a scenery effect equivalent to a Moderate SIO and therefore meet the applicable scenery management objective.

Should one or both off-site parking lots be excluded from the Proposed Action, the scenery impacts would be reduced and expected to maintain a scenery effect equivalent to a Moderate SIO and meet the applicable scenery management objective.

Sterling Highway

The Sterling Highway is a paved, two-lane highway with a speed limit of 55 miles per hour and runs to the north of the Proposed Action. Except for Jims' Landing Road, it is not anticipated that Alternative A is visible from the Sterling Highway. The entrance to Jims' Landing Road and facility sign may be viewed for a short duration and not be apparent to many due to travel speeds and existing vegetation screening the site. The parking lot associated with Alternative A and Option 1 and 2 Off-Site Parking areas are not expected to be visible due to the expansive depth of natural vegetation (trees and shrubs) between the Sterling Highway and the Proposed Action. On rare occasions, the glint from vehicles parked at the Option 2 Off-Site Parking area may occur. In winter, Alternative A will remain unseen from the Sterling Highway. Short duration filtered views of Option 2 Off-Site Parking area may occur due to leaf loss in the vegetative buffer; however, winter use of this lot is not anticipated. It is expected that Alternative A, with Options 1 and 2 Off-Site Parking, as seen from the Sterling Highway, will have a scenery effect equivalent to a High SIO and therefore meet the applicable scenery management objective.

Should Option 2 Off-Site Parking area be excluded from the project, the scenery impacts would be slightly reduced and expected to maintain a scenery effect equivalent to a High SIO, therefore meeting the applicable scenery management objective. Option 1 Off-Site Parking area remains unseen from the highway, so its elimination would not impact the seen landscape.

Alternative B, With Options 1 and 2 Off-Site Parking

Kenai River

The Kenai River passes immediately to the south of the Proposed Action. Under Alternative B, with Options 1 and 2 Off-Site Parking, the boat launch structure, viewing platform, and adjacent parking will be visible from the river. The boat launch facility will be in view for a short duration (less than 3 minutes) due to river currents and the relatively unimpacted existing vegetation buffer. The parking lot will be more apparent when occupied by vehicles. Views to the parking area northeast of the boat launch will be filtered by the existing riparian vegetation (shrubs, deciduous trees, and coniferous trees) along the Kenai River that will be retained. Taller vehicles using the parking lot may extend above the existing shore vegetation or be more evident through filtered views. It is expected that glint, a momentary flash of light from a reflective surface, may occur from a parked vehicle's windshield on sunny days.

During the winter, it is likely that impacted areas will be more visible from the river with the loss of deciduous leaf cover. However, the winter has minimal river traffic, and the facility may be closed seasonally to prevent access and use. All other facilities not adjacent to the river, including Option 1 & 2 Off-Site Parking, are expected to be unseen from the Kenai River.

It is anticipated that Alternative B, with Options 1 and 2 Off-Site Parking, as viewed from the Kenai River, will have a scenery effect equivalent to a Moderate SIO and therefore meet the applicable scenery management objective.

Skilak Lake Road

Skilak Lake Road is a paved, two-lane road, turning to gravel shortly after Jims' Landing Road and runs to the north of Alternative B and Option 1 Off-Site Parking. Option 2 Off-Site Parking is located north of Skilak Lake Road.

The speed limit on Skilak Lake Road is 35 miles per hour, and Jims' Landing Road is located after a sharp curve. Based on travel speed and limited time before passing the road, views from a vehicle into the site with the Proposed Action will occur over a short time frame. The facility sign at the intersection of Skilak Lake Road and Jims' Landing Road will be viewed for a short time.

To the east of Jims' Landing Road is a heavily wooded forest with views into the site expected to be minimal. To the west, filtered views of Option 1 and 2 Off-Site Parking may occur through the existing tree and shrub vegetation along Skilak Lake Road. Both Option 1 and 2 Off-Site Parking sites are located over 60 feet from Skilak Lake Road. The preserved native vegetation buffer the lots and are comprised of trees (coniferous and deciduous) and shrubs. It is expected that the access to each will be viewed for a short time from Skilak Lake Road as they intersect the road at a right angle. The Option 1 Off-Site Parking area is buffered by a parking island located near the driveway entrance. The island will protect and retain existing native trees and shrubs, minimizing views of the lot. Option 2 Off-Site Parking has a curved layout for both the driveway and parking lot, reducing views into the lot as short duration. For all parking areas, taller vehicles may extend above the existing vegetation or be more evident through filtered views. On sunny days, it is expected that glint may occur from a parked vehicle's windshield.

During the winter, it is likely that the analysis area will be more visible from the road due to loss of leaf cover by existing vegetation. The facility may be closed seasonally to prevent access and use and reduce visual impacts from parked vehicles. All facilities adjacent to the Kenai River are expected to remain unseen from Skilak Lake Road. It is expected that all facilities in Alternative B, with Options 1 and 2 Off-Site Parking, as seen from Skilak Lake Road, it will have a scenery effect equivalent to a Moderate SIO and meet the applicable scenery management objective.

Should one or both off-site parking lots be excluded from the Proposed Action, the scenery impacts would be reduced and expected to maintain a scenery effect equivalent to a Moderate SIO and, therefore, meet the applicable scenery management objective.

Sterling Highway

The Sterling Highway is a paved, two-lane highway with a speed limit of 55 miles per hour and runs to the north of the Proposed Action. Except for Jims' Landing Road, it is not anticipated that Alternative B is visible from the Sterling Highway. The entrance to Jims' Landing Road and facility sign may be viewed for a short duration and not be apparent to many due to travel speeds and existing vegetation screening the site. The parking lot associated with Alternative B and Option 1 and 2 Off-Site Parking areas are not expected to be visible due to the expansive depth of natural vegetation (trees and shrubs) between the Sterling Highway and the Proposed Action. On rare occasions, the glint from vehicles parked at the Option 2 Off-Site Parking area may occur. In winter, Alternative B and Option 1 Off-Site Parking will remain unseen from the Sterling Highway. Short duration filtered views of Option 2 Off-Site Parking area may occur due to leaf loss in the vegetative buffer; however, winter use of this lot is not anticipated. It is expected that Alternative B, with Options 1 and 2 Off-Site Parking, as seen from the Sterling Highway, will have a scenery effect equivalent to a High SIO and therefore meet the applicable scenery management objective.

Should Option 2 Off-Site Parking area be excluded from the project, the scenery impacts would be slightly reduced and expected to maintain a scenery effect equivalent to a High SIO, therefore meeting the applicable scenery management objective. Option 1 Off-Site Parking area remains unseen from the highway, so its elimination would not impact the seen landscape.

Preliminary Consistency Determination and Mitigation

Under the No Action Alternative, the scenery effect is expected to be consistent with a Moderate SIO and meet the applicable scenery management objective.

Visual impacts to the landscape under the two Proposed Actions are expected to be consistent with a Moderate SIO and meet the analysis area's scenery management requirements. While meeting the requirements, a possible area of concern is the parking adjacent to the Kenai River and the visual impacts to river users. It is crucial to maintain a buffer of native vegetation comprised of trees and shrubs along the Kenai River to act as a natural visual buffer from the river. Minimizing earthwork disturbance within the Proposed Actions and maintaining existing native vegetation during construction will reduce the visual impacts along the travel routes.

Although the CNF Plan and the Front Country Management Area allow for small areas of non-conforming visual impacts at a Low SIO, maintaining a Moderate SIO is achievable. If larger native vegetation is required to be removed to accommodate the Proposed Actions, replanting these areas to reestablish an effective visual buffer, especially along the Kenai River, will preserve a Moderate SIO and create consistency with the scenery management requirements.

References

USDA United States Forest Service (USFS). 1974. National Forest Landscape Management, Volume 2, Chapter 1: "The Visual Management System" Agriculture Handbook No. 462. Washington, DC: U.S. Department of Agriculture, Forest Service. 47 pages.

USFS. 1996. National Forest Landscape Management: Volume 2, Chapter 1: "Landscape Aesthetics: A Handbook for Scenery Management" Agriculture Handbook No. 701. Washington, DC: U.S. Department of Agriculture, Forest Service. 257 pages.

USFS. 2003. FSM guidelines: (Section 2380) Landscape Management. Washington D.C.: U.S. Department of Agriculture. 15 pages.

USFS. 2020. "Chugach National Forest Land Management Plan". USFS Region 10. Chugach National Forest. 177 pages.

US Department of the Interior, US Fish and Wildlife Service (USFWS). 2010. "Comprehensive Conservation Plan: Kenai National Wildlife Refuge". USFWS Alaska Regional Office and Kenai National Wildlife Refuge. 532 pages.

USFWS. 2007. "Kenai National Wildlife Refuge: Skilak Wildlife Recreation Area, Revised Final Management Plan". USFWS Alaska Regional Office and Kenai National Wildlife Refuge. 90 pages.

Figure 1: Vicinity Map

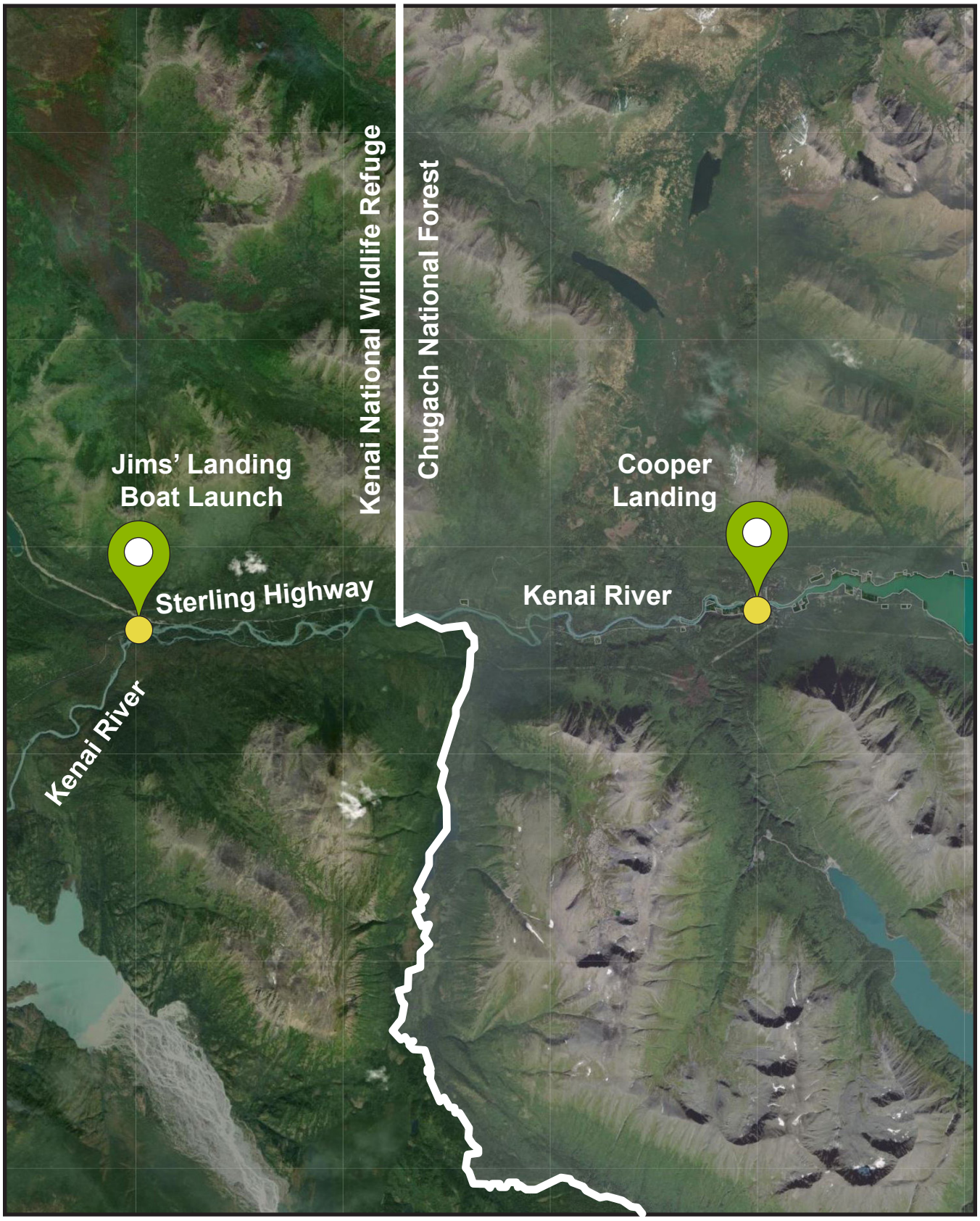

Figure 2: Chugach National Forest Management Areas

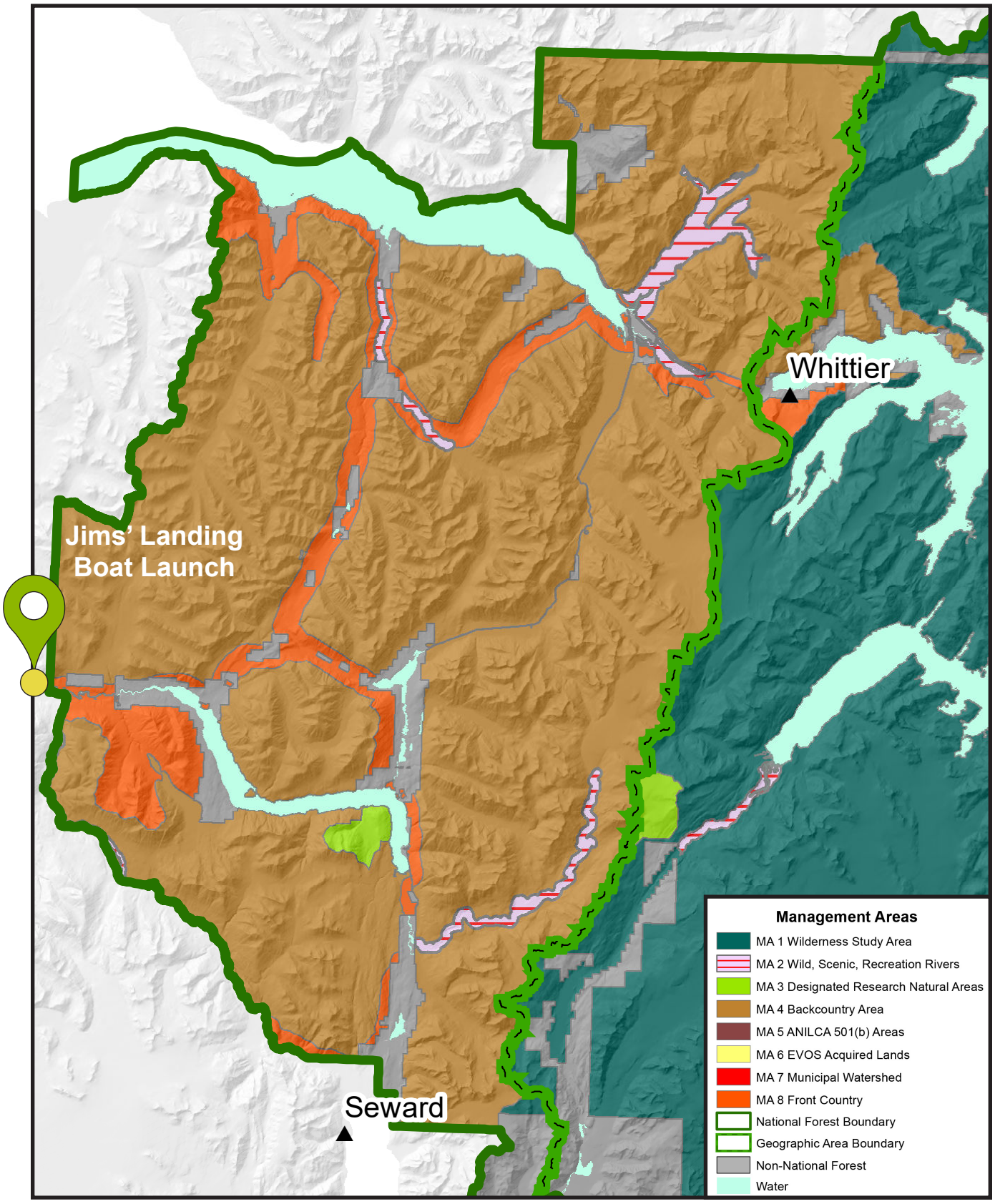

Figure 3: Chugach National Forest Scenery Integrity Objectives

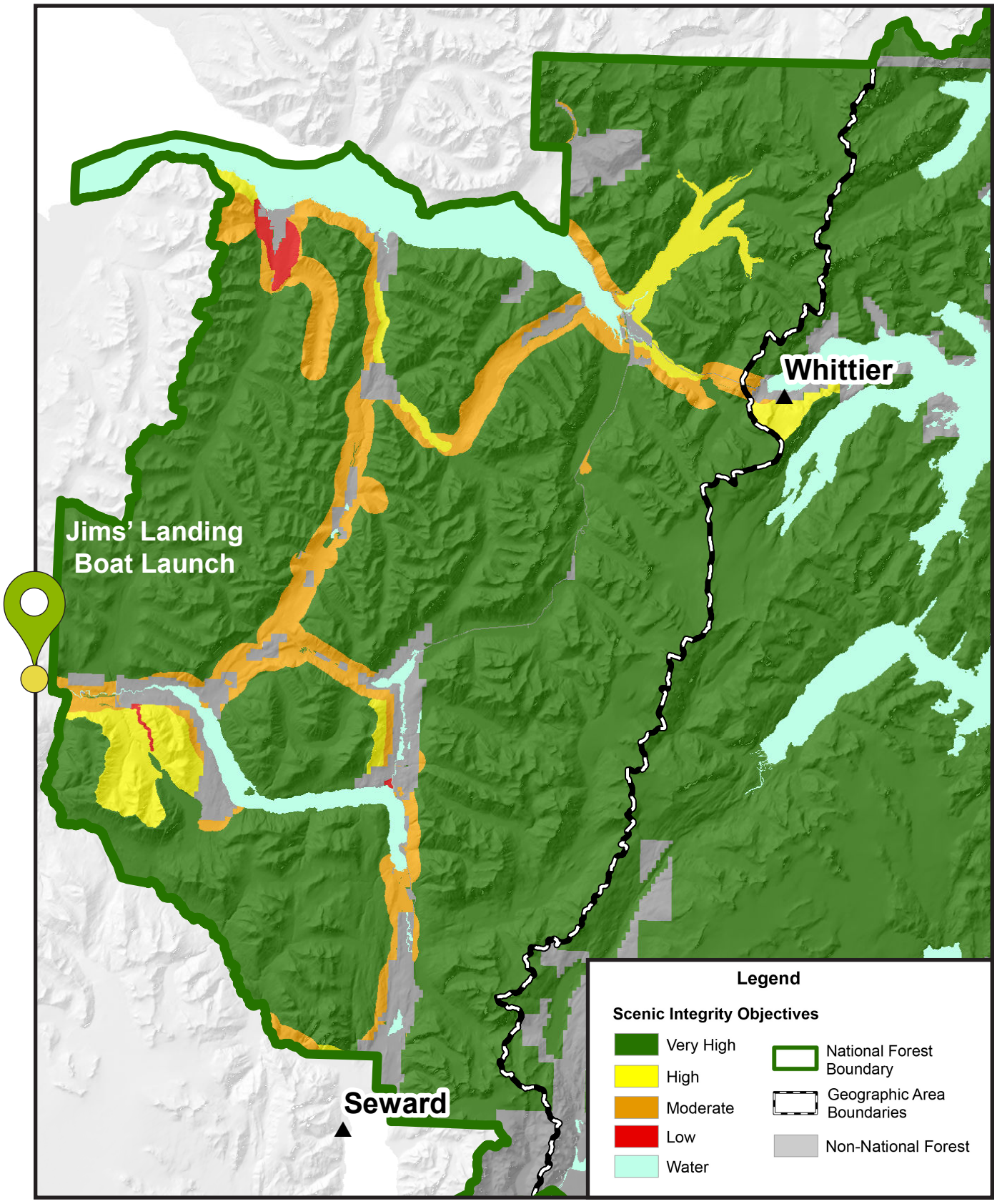

Figure 4: Common Viewing Locations

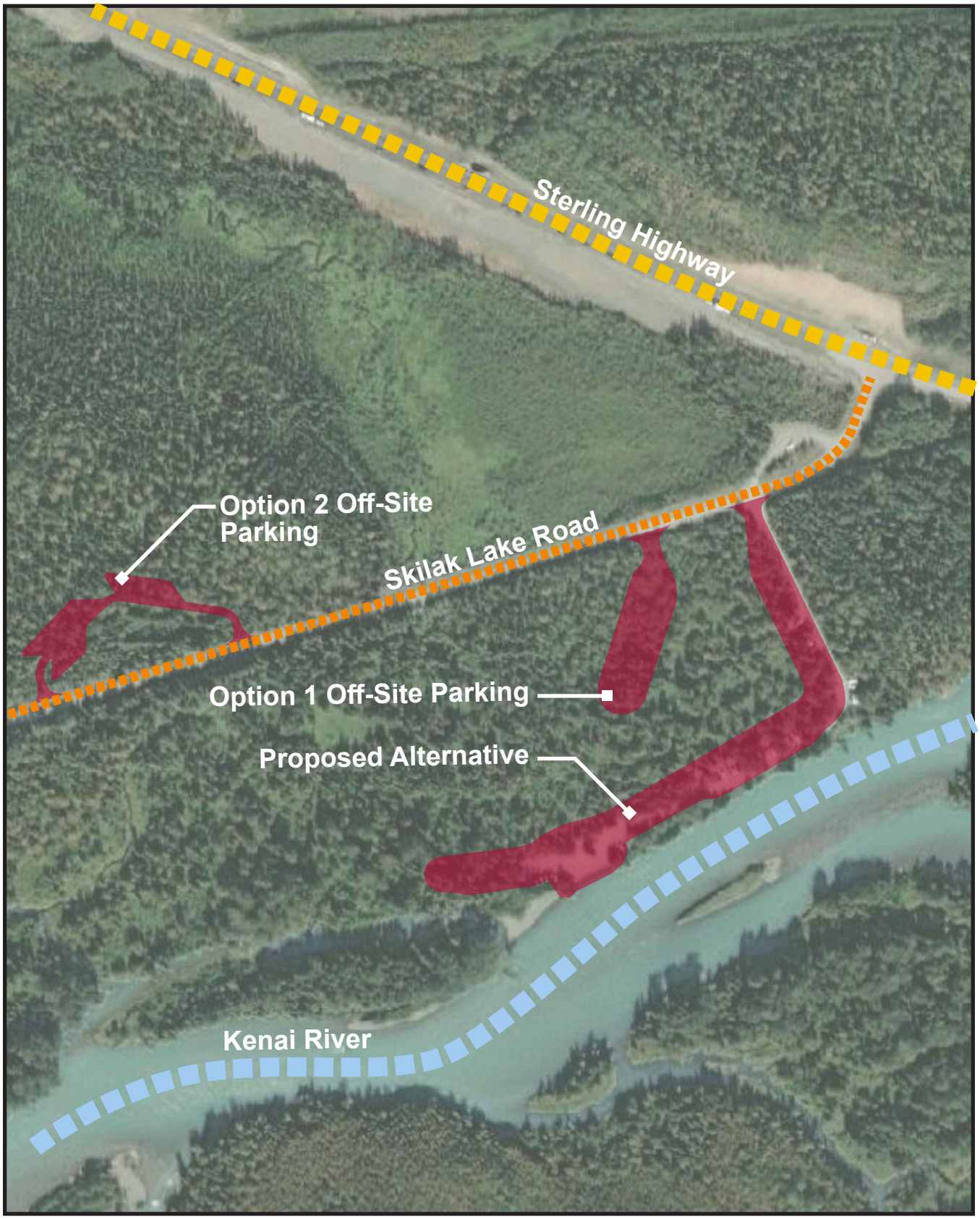

Figure 5: Site Photos

Landscape Character Along Sterling Highway: Chugach National Forest: Management Area 8

Landscape Character Along Sterling Highway: Kenai National Wildlife Refuge: Jims' Landing

Landscape Character Along Kenai River: Chugach National Forest: Management Area 8

Landscape Character Along Kenai River: Kenai National Wildlife Refuge: Jims' Landing

Existing Site Conditions: Kenai River Adjacent Jims' Landing Parking

Existing Site Conditions: Kenai River Adjacent Jims' Landing Launch Facility

Existing Site Conditions: Sterling Highway and Skilak Lake Road Intersection

Source of all images: Google Streetview, 2016

Appendix 5 Agency Notification Letters and Comments

On November 20, 2020, the following agencies received an Agency Invitation to Participate in Public Scoping for the Jim's Landing Improvements Project, Kenai National Wildlife Refuge, Alaska. Each agency received a notification and attachment. A copy of the notification and attachment are included in this appendix.

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Francisco Sanchez
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33599 Ranger Station Spur, Mile Marker 23.5
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PND ENGINEERS, INC.

November 20, 2020

Francisco Sanchez
Seward Ranger District
U.S. Forest Service
33599 Ranger Station Spur, Mile Marker 23.5
Seward, AK 99664

Subject: Agency Invitation to Participate in Public Scoping for the Jim's Landing Improvements Project, Kenai National Wildlife Refuge, Alaska.

Dear Mr. Sanchez:

PND Engineers Inc. (PND), on behalf of the U.S. Fish and Wildlife Service (Service), is gathering information to assist with the preparation of an Environmental Assessment for the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge (KNWR), Alaska. One of the first steps is to solicit input from interested parties regarding the proposed project. Your agency has been identified as an agency that may have an interest in the Service's proposed project based on your jurisdiction by law and/or special expertise.

The Service intends to prepare an environmental assessment to evaluate the impacts on the environment related to the proposed federal action, Jim's Landing Boat Launch Access and Parking Improvements. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

The Service and PND invites your agency to participate in the project's public scoping period which includes a public meeting. The scoping process is intended to provide your agency with the opportunity to identify issues related to your agency's interest, including the identification of permits that may be required, environmental impacts and issues, and design considerations.

The Public Meeting is intended to provide context and explain the proposed alternatives. Please review the attachments for more information regarding the public meeting and scoping period.

PUBLIC MEETING

A 30-day public scoping comment period will begin on December 8, 2020 and end on January 8, 2021. A virtual public meeting will be held on December 8, 2020 from 5:30 pm to

7:30 pm. Web Link for Virtual Public Meeting on Zoom:
https://us02web.zoom.us/j/85139574901?pwd=OGwrSVBwdWxEUUFtWk81a2srWjVWdz09#success

Alternative Call-in Number: +1 669 900 6833
Meeting ID: 851 3957 4901
Passcode: 023016

The meeting will consist of a live presentation followed by a question and answer session. Questions can be submitted in writing during the meeting. General comment instructions will be provided during the meeting and on the website https://usfws-jims.blogspot.com/.

Availability of documents: You may obtain copies of the public scoping materials on the internet at https://usfws-jims.blogspot.com/ on December 1st, 2020.

If you have any questions regarding the meeting or your agency's participation, please contact Anna Kopitov, PND NEPA coordinator, at (206) 940-7068 or akopitov@pndengineers.com or Alexandra West Jefferies, PND Project Manager, Email: ajefferies@pndengineers.com at (907) 561-1011.

Thank you for your cooperation and interest in the Jim's Landing Improvements Project.

Sincerely,

Anna Kopitov
NEPA Coordinator
Consultant Team

Enc. Public Announcement

Cc: Amy Klein, USFWS, Project Manager/Contracting Officer's Representative
Steve Miller, USFWS, Project Leader
Alexandra West Jefferies, PND Engineers, Inc., Project Manager, Consultant Team
Paul Kendall, PND Engineers, Inc., P.E., Vice President, Consultant Team

JIM'S LANDING IMPROVEMENTS PROJECT LEGAL NOTICE

The U.S. Fish and Wildlife Service (Service), provides this notice of intent to begin a public scoping period followed by the preparation of an environmental assessment. The Service intends to prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Based upon substantive comments received during this scoping period, we will make needed changes to our current alternatives that will subsequently be evaluated in an Environmental Assessment.

Reasonable Accommodations

Persons needing reasonable accommodations in order to attend and participate in either of the virtual public scoping meetings should contact the PND Engineers, Inc. office, using one of the methods listed in **ADDRESSES** as soon as possible. In order to allow sufficient time to process requests, please make contact no later than one week before the date of the public meeting. Information regarding this proposed action is available in alternate formats upon request.

ADDRESSES

Availability of documents: You may obtain copies of the public scoping materials on the internet at https://usfws-jims.blogspot.com/ or by email (see **For Further Information**) or by telephone at (907) 561-1011.

You may submit written comments to PND Engineers Inc, 1506 W. 36th Ave., Anchorage

AK 99503. Comments may also be sent via e-mail to jimslanding@pndengineers.com, via the internet at https://www.surveymonkey.com/r/6H7BPVL, or by calling (907) 646-2784.

FOR FURTHER INFORMATION CONTACT
Alexandra West Jefferies, PND Project Manager, Email:jimslanding@pndengineers.com, Telephone: (907) 561-1011.

Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8 a.m. and 8 p.m., Eastern Time, Monday through Friday.

Appendix 6 Tribal Coordination and Notification Letters

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20027sam

November 23, 2020

Mr. Richard Encelewski
PO Box 39130
Ninilchik, AK 99639

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Greg
Dear Alaska Native Corporation Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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December 1, 2020. This scoping material may also be obtained by contacting Alexandra West Jefferies, PND Project Manager, at (907) 561-1011 or jimslanding@pndengineers.com, or by contacting Refuge Manager Andy Loranger at the number or email below.

The Service would welcome any comments you may have, and is offering an opportunity to schedule government to government consultation with us by phone or in-person. Government to government consultation will continue to be available throughout this process. Your input and guidance are important, and we are committed to creating opportunities for meaningful and respectful consultation between ANCSA Corporation leadership and Service officials.

To set up a time to consult, please contact Andy Loranger, Refuge Manager at Kenai National Wildlife Refuge, at 907-260-2804 or andy_loranger@fws.gov as soon as possible. If you have questions regarding government to government consultation, please contact Crystal Leonetti, Alaska Native Affairs Specialist, at 907-786-3868 or crystal_leonetti@fws.gov.

Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20027sam

November 23, 2020

Mr. Lloyd Stiassny
PO Box 5569
Port Graham, AK 99603

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Alaska Native Corporation Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20027sam

November 23, 2020

Mr. Christopher Monfor
PO Box 2682
Kenai, AK 99611-268

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Alaska Native Corporation Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20027sam

November 23, 2020

Ms. Kimberly Kashevarof
PO Box A
Seldovia, AK 99663

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Alaska Native Corporation Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20027sam

November 23, 2020

Mr. Leo Barlow
1689 C Street, Suite 219
Anchorage, AK 99501-5131

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Alaska Native Corporation Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20027sam

November 23, 2020

Ms. Sophie Minich
725 E. Fireweed Lane, Suite 800
Anchorage, AK 99503

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Alaska Native Corporation Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20028sam

November 23, 2020

Mr. Wayne Wilson
P.O. Box 988
Kenai, AK 99611-0988

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Tribal Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20028sam

November 23, 2020

Ms. Gwen Kvasnikoff
P.O. Box 8028
Nanwalek, AK 99603-8028

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Tribal Leader:

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20028sam

November 23, 2020

Mr. Patrick Norman
P.O. Box 5510
Port Graham, AK 99603

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Tribal Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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https://us02web.zoom.us/j/85139574901?pwd=OGwrSVBwdWxEUUFtWk81a2srWjVWdz09#success
Alternative Call-in Number: +1 669 900 6833
Meeting ID: 851 3957 4901
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Based upon substantive comments received during this scoping period, we will make needed changes to our current alternatives that will subsequently be evaluated in an environmental assessment.

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The Service would welcome any comments you may have, and is offering an opportunity to schedule government to government consultation with us by phone or in-person. Government to government consultation will continue to be available throughout this process. Your input and guidance are important, and we are committed to creating opportunities for meaningful and respectful consultation between Tribal leadership and Service officials.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20028sam

November 23, 2020

Mr. Frank Standifer III
P.O. Box 82009
Tyonek, AK 99682-0009

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Tribal Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

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P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20028sam

November 23, 2020

Mr. Richard Encelewski
P.O. Box 39070
Ninilchik, AK 99639

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Tribal Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

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P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20028sam

November 23, 2020

Ms. Crystal Collier
Drawer L
Seldovia, AK 99663-0250

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Tribal Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

United States Department of the Interior

KENAI NATIONAL WILDLIFE REFUGE
P.O. Box 2139
Soldotna, Alaska 99669-2139
(907) 262-7021

IN REPLY REFER TO:
20028sam

November 23, 2020

Ms. Penny Carty
P.O. Box 2682
Kenai, AK 99611

Subject: Public Scoping Period and Environmental Assessment Development for Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska

Dear Tribal Leader:

The U.S. Fish and Wildlife Service (Service), intends to begin a public scoping period followed by the preparation of an environmental assessment. The Service will prepare an environmental assessment to evaluate the impacts on the environment related to the Jim's Landing Boat Launch Access and Parking Improvements, Kenai National Wildlife Refuge, Alaska. The draft environmental assessment is scheduled to be released for public comment February 2021 and the final environmental assessment, and a Notice of Intent to publish an Environmental Impact Statement or a Finding of No Significant Impact, is scheduled for April 2021.

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Sincerely,

Andy Loranger
Refuge Manager
Kenai National Wildlife Refuge

Appendix 7 Public and Agency Comments and USFWS Responses

PUBLIC COMMENTS AND RESPONSES

When considering alternatives for the proposed project, the USFWS must comply with all applicable laws and regulations, including but not limited to ANILCA, the Refuge's Comprehensive Conservation Plan, National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd-668ee), Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k-4), and selected portions of the Code of Federal Regulations and Fish and Wildlife Service Manual, Executive Order (EO) 11988, as amended, Floodplain Management, and Executive Order 11990 Protection of Wetlands, 42 Fed. Reg. 26961 (1977). Table 1 summarizes changes in the Final Environmental Assessment as a result of comments and changes in data.

Group Response Regarding Trailer Lanes

Several commenters expressed a preference for accommodating more than two trailer lanes in the active ramp area. The Service prepared a group response to address these comments.

Thank you for your comments and questions during the virtual public review meeting on May 19, 2021 and during the public comment period for the Draft Environmental Assessment for the Jims' Landing Access Improvements Project. The USFWS has incorporated a design change to the boat ramp to accommodate three active ramp lanes. This design change will accommodate simultaneous use of three vehicles with trailers at the ramp for launching or retrieving boats. This design change together with improvements to vehicle circulation, pull out areas, and parking will facilitate traffic flow, resulting in more efficient ramp use during peak use periods.

Please refer to page 15 of the final EA to review the change in design to accommodate up to three trailers at the boat ramp.

Individual Comments and Responses Received via Email

Comment 1

In regard to the public comments relating to the alternatives for possible Jim's Landing Access Improvements:

* Alternative A would be my choice, since the KNWR should be more concerned with fish, riparian, and wildlife in the refuge (including the WRA) – including their sensitive habitats like Jean Creek watershed – over the needs of human recreation needs. I realize the high amount of use in the area during a few months of the year, but Alternative B and C reduce habitat acreage during ALL seasons of the year, not just drift/fishing season. In addition, I think other options should be considered for Jim's Landing 'improvements' for public access. For example, why not increase the parking areas along the north side of the road (expanding the existing parking area) and install a pedestrian tunnel under the highway similar to that found at Skyline Trail just a few miles down the road? This option would involve partnership with the DOT, but it would expand boat parking (north side highway), improve pedestrian safety (walking under highway instead of over), and not damage or reduce the riparian/wildlife habitat in the Jean Creek area to the extent Alternatives B and C would. There are likely way more pedestrians who'd use an underpass at Jim's Landing than the one at Skyline Trail, so I'd think the funds to install a pedestrian tunnel (for public safety) would be possible and keep the priority of diminished wildlife habitat loss intact for the KNWR.

*If Alternate A is not chosen, I would choose Alternate B over Alternate C, since Alternate B leaves a reduced human habitat footprint than Alternate C (for reasons underline above). In addition, if the choice is between B or C (with one parking option), then the choice of B would still include additional parking, but with less damage and habitat loss to the existing Jean Creek watershed. If Alternate B were selected, I think the addition of a small 'viewing platform' (similar or smaller to Alternate C option) would be a good addition, since there's a lot of people who access Jim's Landing with no trailers, boats, or intention of fishing (all 12 months of year)

* Off – Site Parking Options: If the choice comes down to Alternate B or C, the off-site parking option I'd suggest is expanding the existing parking area NORTH of the highway and installing a pedestrian tunnel under the highway. I realize the highway in the section of the tunnel would need to be raising to account for Kenai River periodic flooding. If this option is not considered, I would recommend Off-Site Parking Option 1 over Option 2 for the following reasons: Option 1 would expand the human footprint (habitat loss and expansion of human use in area) to a lesser degree than Option 2. Brown bears use the Jean Creek watershed for feeding (salmon) and a movement corridor, and Option 2 would result in more human/ brown bear conflicts and interaction than Option 1 would. This is largely due to the long pedestrian walkway designed for Option 2. With that long walkway design (parking Option 2), there'd be an increase in negative human/bear interactions in the salmon watershed area encompassing and surrounding the walkway. In addition, even if people are encourage to stay on the walkway (option 2), there'd inevitably be people who'd go off the walkway to the surrounding creek area and damage the riparian habitat along the creek in the process. Parking option 1 doesn't cross over or get as close to the creek side habitat as Option 2 would inevitably create. Brown bears and the other wildlife that use the Jean Creek watershed habitat should have priority over human recreational users in this WRA of the Kenai National Wildlife Refuge.

Service Response

Thank you for your email dated June 19, 2021 commenting on the Draft Environmental Assessment (EA) for the Jims' Landing Access Improvements Project.

In regard to impacts to wildlife and habitats, the proposed access improvements were located to minimize construction impacts, and avoid and minimize adverse effects to wildlife and habitat. The USFWS agrees that avoiding impacts to the Jean Creek riparian corridor is important, and this influenced our decision to choose Option 1 for the additional off-site parking. The USFWS will implement best management practices, avoidance and mitigation measures, and permit requirements to reduce impacts to wildlife and habitat. With respect to the suggestion regarding expanding the existing parking area north of Sterling Highway, this option would not meet the purpose and need of the proposed project to improve public safety conditions. While a pedestrian underpass could help meet this objective, elevating the Sterling Highway to the height capable of allowing a pedestrian underpass at this location would likely not be feasible and was not considered as a component of any of the evaluated alternatives. We believe that the USFWS has addressed all of the concerns expressed in your email in Tables 4-1 through 4-6 of the final EA.

Comment 2

I have been using this river access since the summer of 1981. I lived in Cooper Landing for 6 years, guided professionally for 4 years and have used this section of river every one of those 40

years. I am, I believe, uniquely suited to provide an opinion that is informed by this experience.

The increasing user numbers on this section of river continue to degrade the natural habitat, the fisheries stock (and the diversity of its composition) as well as the user experience. The management of this area and considerations for future use are inappropriately focused on providing user access and not balanced well with preserving the resource. I believe the individuals responsible for considering decisions and inputs are influenced by baseline drift that creates a feedback loop in the management system driving degradation of the resource.

Please consider restricting user numbers as a key element in the overall planning. While I would generally agree that of you are allowing more users you will need to accommodate them for human waste, parking and traffic concerns - fewer users must be a part of the longer term strategy.

Restrict all guide starts (including scenic), recreational floating starts (consider models used elsewhere) and special fishing permits.
Increase enforcement of current regulation and restrictions
Consider special fishing regulations that reduce pressure on stocks (barbless, no fishing areas, etc.)

Simply put, if the same strategies that have been applied are continued, the upper Kenai River and the areas around it will continue to be more crowded, more littered, more contaminated with human waste with fish stock's genetic diversity across species homogenized (culling desirable traits) and less spectacular. These things are already true and obvious when viewed with a 40 year perspective.

I am not confident that these considerations will be included in the planning and ultimate management strategy and will watch as this area continues to be negatively impacted by all users.

Service Response
Thank you for your email dated May 10, 2021 commenting on the Draft Environmental Assessment for the Jims' Landing Access Improvements Project.

In regard to impacts to wildlife and habitats, the proposed access improvements were located to minimize construction impacts, and avoid and minimize adverse effects to wildlife and habitat. The USFWS will implement mitigation measures and permit requirements to reduce impacts to wildlife and habitat. We believe that the USFWS has addressed all of the concerns expressed in your email in Tables 4-1 through 4-6.

Comment 3

I would like to give my public comment regarding the Jim’s Landing Access Improvements.

After reading through the Alternatives, I believe that Alternative A would be the best choice. This plan would have the least amount of impact on the wildlife (including riparian and fish) of the Jean Creek area. The KNWR should be a place which prioritizes the needs of wildlife habitat

over that of human recreation. Yes, many humans do use Jim's Landing during the spring and summer fishing season and it can be quite a busy place. But for the other nine months of the year, the traffic through the area is minimal. We should select an alternative that would only impact the acreage for wildlife habitat for those fishing months, not the entire year. Alternative A best meets these criteria (over B and C). (If it came down to only choosing between B and C, Alternative B would be preferable to Alternative C for the same reasons: it's impact would be more than A, but less than C. The parking option with B is more wildlife friendly than Alternative C.)

As far as off-site parking is concerned (for Alternative B & C), I believe Option 1 would have less of an impact on wildlife than Option 2. I think the refuge should focus more on protecting brown bears in the area over opening up more of the bears' territory to humans. The Jean Creek watershed is a favorite salmon feeding spot for bears, as well as a passageway for movement, and any construction of boardwalks, trails, etc., in this area would increase the number of bear/human conflicts (usually ending with the bear being shot). In addition, I would not rely on people to adhere to the rules of staying on the walkway; they would go down to the creek, damaging habitat in the process, and possibly encounter a feeding bear by the water. Option 2, with its longer walkway, is a disaster waiting to happen. At least Option 1 would have less of an impact on the bears using the area.

Finally, I've wondered, "Why not just expand the parking lot that's already on the other side of the Sterling Highway as an extra parking area?" That area is already much further from Jean Creek and would just involve expanding it more into the adjoining hillside. To help with safety concerns, the Department of Transportation could then build some sort of pedestrian crossing, perhaps like the tunnel by Skyline Trail or the wildlife tunnels along the Sterling Highway. This would help eliminate the bear/human encounters, allow fishermen to safely cross the highway, and expand the parking area that is already established.

These are my opinions on the proposal, and I thank you for reading and considering them.

Service Response

Thank you for your email dated June 19, 2021 commenting on the Draft Environmental Assessment for the Jims' Landing Access Improvements Project.

In regard to impacts to wildlife and habitats, the proposed access improvements were located to minimize construction impacts, and avoid and minimize adverse effects to wildlife and habitat. The USFWS agrees that avoiding impacts to the Jean Creek riparian corridor is important, and this influenced our decision to choose Option 1 for the additional off-site parking. The USFWS will implement best management practices, avoidance and mitigation measures, and permit requirements to reduce impacts to wildlife and habitat. With respect to the suggestion regarding expanding the existing parking area north of Sterling Highway, this option would not meet the purpose and need of the proposed project to improve public safety conditions. While a pedestrian underpass could help meet this objective, elevating the Sterling Highway to the height capable of allowing a pedestrian underpass at this location would likely not be feasible and was not considered as a component of any of the evaluated alternatives. We believe that the USFWS has addressed all of the concerns expressed in your email in Tables 4-1 through 4-6 of the final EA.

Comment 4

In 1998, the approximate year I began frequent use of the boat launch at Sportsman's Landing, the price of parking there was about $7. It is now at least $12, having been steadily increased by the FWS . To launch a boat and park a vehicle the total cost now is at least $18 ! The overall consumer price index during the period 1998 to Dec 2020 has increased from 163 to 258.811 (Bureau of Labor Statistics), an increase of 59 %. The parking cost at Sportsman's has increased by 71% in the same period.

That disparity is evidence of what I believe is likely to also happen at Jim's Landing in the future – collection of fees and cost inflation that will again exceed the Consumer Price Index. Based on what has happened at Sportsman's, price gouging over time is likely to occur at Jim's, thus excluding users from the river who can't afford it. The very owners of the land (U.S citizens) are the ones being gouged and forced out.

It can only be concluded that your EA's socio economic analysis (see page 44) is extremely superficial, as if there is some guarantee that there will not be a gate nor parking fees collected at Jim's Landing in the future. Yet where is such guarantee of a moratorium on increased fees to use the FWS lands for river entry or parking near Jim's? Why aren't parking and/or other user fees forecast for the alternatives and discussed as impacts, direct and cumulative?

I doubt you can provide any assurance that there will be no fees, so I believe the superficial socioeconomic section (see draft EA p 44) downplays the significance of all the alternative's socio-economic impacts on individuals and economic user groups. Without a detailed forecast of impacts of increased fees or other costs transferred overall to specific user groups, I find your EA to be especially inadequate. It is already beyond the capability of many seniors (many on fixed incomes) and low income residents to pay what is expected now just at Sportsman's - $12 parking and $12 boat launch (Unless you have a special Golden Age or Golden Access pass).

There doesn't appear to be even a breath of a mention of any socio economic impacts in the Cumulative Effects section ! There' s a vague reference about continued coordination – but be serious, "coordination" doesn't save the public from the impact of future lost opportunity due to increased user fees or the cost of having to respond to the burden of so-called coordination. Here we are in a period of time focused on "Covid" when many people are out of work and won't have a spare dime to spend. Meanwhile Fish and Wildlife at Jim's Landing (and Alaska DOT with their Cooper Landing bypass project) grind merrily along with more development as if the rest of us are in the same "who cares about cost" bracket!

Thus,

1. I request that FWS provide a thorough socio-economic section in a comprehensive analysis comparable to what is expected of all other Federal agencies. In the absence of a thorough analysis, I can only conclude that that your EA is insufficient and therefore a EIS should be

completed before decisions are made and work might begin at “Jims’ “ Landing.

2. A reasoned choice among the alternatives cannot be made at this time based on the EA as currently provided.

Service Response
Thank you for your email dated June 18, 2021 commenting on the Draft Environmental Assessment for the Jims’ Landing Access Improvements Project. The USFWS has reviewed your email and concludes that the issues you raise have been addressed in their entirety in the EA. The EA was prepared in compliance of the National Environmental Policy Act (NEPA) to evaluate the environmental effects of the proposed action.

With respect to socioeconomics and the suggestion that a fee for using Jims’ Landing is imminent, the USFWS has no plans for implementing fees for use of the site resulting from these improvements at Jims’ Landing. We believe that the USFWS has addressed all of the concerns expressed in your email in the final EA.

Comment 5

Thanks for the information and thought going into improvements at Jims’ Landing. I am supportive of these improvements which include reducing the grade on the boat ramp and overflow parking that does not require crossing the highway. The overflow parking may need to be larger. My requests for the improvements would be:

1) Lower the grade further
2) Construct broader turning radii in the boat ramp area
3) Ensure the landing and pull out area is sufficient to accommodate up to 15 staging boats and more than two loading/pull out slots at a time. This ramp is extremely busy and dangerous in afternoons and evenings. Do not provide more space for boats to off load gear to vehicles in the ramp area. Construct this sort of staging away from the ramp on the road out of the landing area, but closer than it currently is located (on Skilak Lake road). The Bing’s Landing state boat ramp handles this very well with just one ramp.

Service Response
Thank you for your email dated June 14, 2021 commenting on the Draft Environmental Assessment for the Jims' Landing Access Improvements Project.

With respect to the suggestion the ramp be expanded to accommodate 15 boats, the preferred alternative minimizes construction impacts, avoids and minimizes adverse effects to wildlife and habitat, while providing more efficient use of the ramp. The USFWS has incorporated a design change to the boat ramp to accommodate three active ramp lanes (page 15 of the final EA). Landing and staging on the ramp would be accommodated downstream and adjacent to the active area. The selected alternative also provides additional pull-offs to provide make-ready areas prior to the boat ramp and tie-down areas after retrieving boats at the boat ramp in order to reduce time on the ramp. Turning radii at the ramp area will be designed and modeled for standard truck and trailer use.

In regard to lowering the ramp further, the proposed ramp would be at a much lower grade than existing, but still kept within the recommended slope range according to the States Organization for Boating Access Design Handbook for Recreational Boating and Fishing Facilities (between 12 and 15 percent).

The selected alternative meets the guidelines of the regulatory requirements and the goals of the Refuge. We believe that the USFWS has addressed all of the concerns expressed in your email.

Comment 6

Obviously whoever designed the current proposal has never used it at 5pm. DOUBLE THE SIZE OF THE BOAT LAUNCH DONT CUT IT IN HALF! DOUBLE THE AMOUNT OF STAGGING AREA DONT ELIMINATE IT COMPLETELY! Quadruple the adjacent boat parking dont eliminate it.

I am a 31 year Alaska resident and 10 year Cooper Landing resident and I have done hundreds of trips by boat to Jims Landing.

The problem at Jims Landing are : (1) the boat launch is currently too small because on the current gravel you can only pull or launch 4- 5 boats at once which is too small a capacity; (2) there is not enough area for stagging AT the boat launch for boats pulled out or launching (normally a boat removed from the water or being launched needs a few minutes before going into or out of the water to prepare).

The proposed plans makes all the current problems worse! The current gravel bank allows 4-5 boats to be simultaneously launched and retreived. The unnecessary concrete rams limits boat retrieval to two at a time and cuts the capacity of the current gravel boat ramp by 50% or more.

The circular drive proposal is the old problematic design that for years caused a bottle neck at the boat launch, returning to a circular drive will only slow down the ability to stage boats before and after launch. You will also create long lines of people waiting to launch or retrieve boats. THERE NEEDS TO BE MORE ROOM NOT LESS ADJACENT TO THE BOAT LAUNCH.

The bolders and boat parking area in the river eliminates most of the boat launch and makes pulling off the river harder. You are making the existing problem worse and not fixing the problems. Limiting the current capacity of the boat launch makes the situation worse. At the launch in town you can launch 2 or more boats and rafts at a time. At the Sportmans launch you can lauch 2 or more rafts and boats at a time. Boats are launched all day but the largest volume comes off at Jims between 4-8 pm. So launching all day and retreiving during limited hours creates a traffic jam. This design worsens the traffic jam.

The solution is simple, the current gravel bank can accomodate 4-5 launches at once, so rip out the metal bench and trees adjacent to the existing parking lot and double the size of the boat launch so there is 70 feet of boat launch and 10 boats can be launched or retrieved simultaneously.

Also you should expand the current open area adjacent to the launch to allow more stagging of boats. You should mine the bank back 10-15 feet to create a harbor where dozens of boats can pull into out of the current. Expand the amount of trailer parking immediately adjacent to the launch dont eliminate trailer parking. YOU ARE DOING THE OPPOSITE OF WHAT IS NEEDED!

Doing nothing is better than the current proposal. The current proposal makes matters worse.

Service Response
Thank you for your email dated June 14, 2021 commenting on the Draft Environmental Assessment for the Jims' Landing Access Improvements Project.

The USFWS has reviewed your email and concludes that the issues you raise have been addressed in their entirety in the final EA. The EA was prepared in compliance with the National Environmental Policy Act (NEPA) to evaluate the environmental effects of the proposed action.

The suggestions for further ramp expansion, parking expansion, and gravel extraction to create a harbor, would not meet the USFWS regulatory requirements for the Least Environmentally Damaging Alternative. The USFWS believes the selected alternative improves public safety and site function while avoiding and minimizing adverse effects to wildlife and habitat. The selected alternative meets the guidelines of the regulatory requirements and the goals of the Refuge.

We believe that the USFWS has addressed all of the concerns expressed in your email in the final EA.

Comment 7

As a landowner in Cooper Landing and avid user of the Kenai River, I am in favor of the full development plan for Jims' Landing. I agree that the area is crowded, complicated and challenging in its current state. In addition to the redesign for improved ramps and parking, it would be awesome to have some friendly signage regarding boat ramp etiquette.

Service Response
Thank you for your email dated June 19, 2021 commenting on the Draft Environmental Assessment for the Jims' Landing Access Improvements Project. With regard to the suggestion to add friendly boat ramp etiquette sign, signage will be developed that would allow the average user to properly navigate and utilize the facility.

Comment 8

Cooper Landing Advisory Planning Commission Draft Meeting Minutes
Substantive Comments and Questions

Comment: Does the plan look ahead to a day when there may be less water in the river due to fewer glaciers feeding the Kenai Watershed or is planning of this nature not yet necessary? b. Considerations made in Alternative C:

Service Response
With respect to your question regarding planning for future water availability, we believe that the USFWS has addressed all of the concerns expressed in your email in Tables 4-1 through 4-6 of the final EA.

Comment: Allow better access for all the non-fishing uses of the area including birding and wildlife viewing.

Service Response
Jims' Landing is one recreational site within the greater Skilak Wildlife Recreation Area. Its primary function is to provide access for river users. Many of these users are utilizing the river for birding and wildlife viewing as well as fishing. There are many other upland areas within close proximity to Jims' Landing (e.g., Kenai River Trail) that are managed and provide access for birding and other wildlife viewing.

Comment: How was the decision made to select the site of the viewing platform? Was that site chosen for its birding/wildlife viewing opportunities vs. other locations within the project area?

Service Response
The site was selected to reduce impacts to habitats. Since this area would be impacted by the installation of root wads for bank stabilization, installing a raised viewing platform would permit wildlife viewing and birding on the Kenai River without further impacts to habitat. Other locations likely would increase the resource impacts. With respect to the viewing platform, the proposed location minimizes construction impacts, and avoids and minimizes adverse impacts to wildlife and habitat.

Comment: How does it make it possible to do a pullthrough without running into problems of turning radius or does it not allow pullthrough? If not, why not have pull-through parking for trailers?

Service Response
Traffic circulation is one-way for the proposed action, and provides several recirculation options, but parking is pull-in, back-out. In order to allow for adequate turning radii, the footprint would have to be further expanded into riparian areas and wetlands. The current configuration will provide adequate traffic flow while limiting additional environmental impacts.

Comment: Option 1 keeps the site more compact for wildlife passage around the Jim’s Landing complex instead of through it or would wildlife use these graveled areas to pass through just like we do?

Service Response
It is likely that wildlife would use gravel areas to pass through similar to human use of the area.

Comment: How does Option 1 vs Option 2 impact flood plain and wetland function? Which is better?

Service Response
When considering options for the proposed project the USFWS must comply with all applicable laws and regulations including but not limited to CWA Section 404, Rivers and Harbors Act Section 10, and Executive Order (EO) 11988, as amended, Floodplain Management, and Executive Order 11990 Protection of Wetlands, 42 Fed. Reg. 26961 (1977). Option 1 is located within the floodplain; Option 2 is not located within the floodplain. Option 1 has fewer impacts to wetlands than Option 2. Both options included raised walkways in the wetlands and floodplain.

Comment: Would Option 2 walkway and bridge afford viewing opportunities of fish/birds/wildlife?

Service Response
The purpose of the walkway within Jims' Landing is to provide direct access from the ramp area to the off-site parking area. While the walkway likely would afford opportunistic viewing of fish, birds and wildlife if present in the area, there are other areas within the Skilak Wildlife Recreation Area better suited and designed for these activities.

Comment: How much asphalt would be utilized and how might the run-off toxins from this material impact the river, creek, or wetlands? How does that compare with gravel surface impacts from run-off or gravel shift during flooding?

Service Response
USFWS has chosen to utilize gravel for the majority of roadway and parking areas of the selected alternative. Some design elements of the selected alternative will use hardened surfaces where it is determined necessary for site function or erosion prevention. Gravel surfacing is more pervious and reduces the quantity of stormwater runoff and associated pollutants, but also allows for erosion of the surfacing and deposition of gravel into the river and surrounding wetlands.

Comment: Does the 2019 fire and loose soils/run-off impact the project area and wetland function?

Service Response
The 2019 Swan Lake Fire impacted areas surrounding Jims' Landing as well as the greater Jean Creek watershed and many other watersheds in the region. Direct impacts from the Swan Lake Fire to water quality and wetland function are anticipated to be short term.

Comment: How does the addition of the extra parking area, coupled with the parking already in place on both the north and south sides of the Sterling Hwy cumulatively impact hydrologic function of the lands especially in regards to compaction?

Service Response
The offsite parking site's proposed location is not located within wetlands, and pathways between the site and offsite parking would be an elevated walkway to help maintain hydrologic connectivity. The majority of the project is within the floodplain and proposes to maintain

hydrologic connectivity between the river and wetland to the north through controlled overflow areas. Please refer to page 14 of the final EA for a description of the floodplain overflow area.

Individual Comments and Responses Received During the Public Review and Comment Meeting

Comment 9

would there be rocks in place like at sportsmans boat launch? It would not be very functional at jims

Service Response
Thank you for your question during the virtual public review meeting on May 19, 2021 on the Draft Environmental Assessment for the Jims' Landing Access Improvements Project. Boulders are being proposed along the landing areas, similar to Sportsmans. Boulders will provide both a potential tie off area for non-trailered boats queuing for pick up or launch as well as separate the areas accessible for trailering from this queuing/staging area. Please refer to page 15 for a description of boulders in the final EA.

a reminder that 90 percent of boats will be taking out a jims. would the flow of traffic be more for landing than launching?

Service Response
With respect to your comment and question that 90 percent of boats taking out a Jims' and if the flow of traffic would be more for landing than launching. As stated during the presentation, the selected alternative considers priority to vessels landing at the ramp. In addition, the selected alternative increases the area of make-ready trailer spots for users to retrieve their boats, includes a pull off area on the downstream end of the ramp for trailer queuing while allowing those without trailers to pass through. The parking stalls are oriented for vehicles with trailers and include multiple turnarounds to improve circulation within Jims' Landing.

Comment 10

If option A is chosen will the parking lot across the Sterling Highway remain in use as well?

Service Response
Option A is the no action alternative, everything would remain the same. So, it will still be in use and everything else would remain the same as well.

After work is done will people have to pay to use this site like Sportmans Landing?

Service Response
As noted above in our response to Comment 4, the USFWS has no plans for implementing fees for use of the site resulting from these improvements at Jims' Landing.

Comment 11

I float the river several times a year so i am no stranger to this magnificent river. However, every time i come into Jim's Landing, it always seems difficult to dock safely without a worry about if i don't, then i must go down the canyon. "Hopefully, there aren't too many boats so i can safely dock without any worries".

I have seen numerous boats/rafts trying to dock run into each other or boats/rafts run into trucks/trailers that are too far in the river, thus causing boaters and rafters to swing wide still hoping to make it around them or too many boats docked leaving very little space at the very end to dock.

I would really like to see the dock widened and more importantly deepened. This will ease boaters trying to dock in more space and not cause an accident or worse yet a fatality.

Service Response

The USFWS has incorporated a design change to the boat ramp to accommodate three active ramp lanes. This design change will accommodate simultaneous use of three vehicles with trailers at the ramp for launching or retrieving boats. This design change together with a separate landing area on the ramp, improvements to vehicle circulation, pull out areas, and parking will facilitate traffic flow, resulting in more efficient ramp use during peak use periods.

Table 1 Summary of project description changes for the Selected Alternative resulting from substantive comments received during Public Comment period.

Page #	Section(s)	Description of Change
13	Section 2 Alternatives, 2.1 Selected Alternative Temporary Construction Access	Increased the number of trees greater than 12 inches DBH that would be removed with implementation of the Selected Alternative. New text: Eighty-nine trees greater than 12 inches diameter at breast height (DBH) will be removed permanently for the Selected Alternative. Four trees, greater than 12-inches DBH, would be removed permanently and/or limbs cut to facilitate access by construction vehicles.
14	Jims' Landing Road	Minor Change in Project Description Deleted text: Alternative C would construct a one-way circular access road, measuring approximately 1,500 feet by 18 feet. New text: The Selected Alternative would construct a one-way (uni-directional) access road measuring approximately 1,500 feet. Drive aisles entering Jims' Landing will have parking access and will measure 20-feet wide. Drive aisles exiting Jims' Landing will have no parking access, and will measure 16 feet wide.
14	Jims' Landing Road	Minor Change in Project Description Revised text: Parking areas and roads will be surfaced with gravel. Two road areas will consist of hardened surfaces, the area connecting the road to the boat ramp and an overflow area at the southeast corner of the access road (Figure 2 1). The overflow area is approximately 50 feet wide and maintains hydrologic connectivity between the Kenai River and the adjacent wetland. It was designed to provide controlled overflow during minor flood events and reduce gravel deposition into wetlands during these events. The hardened surface areas may be asphalt pavement, concrete, or articulated concrete block.
14	Pedestrian Walkway, Double Vault Toilet and Viewing Platform	Minor Change in Project Description Deleted text: A new double vault restroom would be constructed approximately 170 feet west of its existing location and modified to meet ADA requirements. New text: A new double vault restroom will be constructed approximately 130 feet northwest of its existing location and will be modified to meet ADA requirements.

15	Boat Ramp	Change in Project Description Deleted text: A 32-foot section of the ramp, located in the center of the ramp, would be designated an active ramp area for loading and unloading boats. The active ramp area would be pulled inland, 10 feet to 20 feet, from its existing location to provide a backwater eddy with reduced velocities for safer loading and unloading of boats. The remaining 78 feet of ramp (approximately 48 feet on the upstream side and 30 feet on the downstream side) would be used for landing and staging. New text: The ramp will have two areas, an active ramp area and an area for landing and staging boats. A 48-foot section of ramp, located on the upstream end of the ramp, would be designated as the active ramp area for loading and unloading boats. A backwater area would be created 15 feet landward of the existing ramp to provide reduced river velocity for safer loading and unloading of boats. The remaining 62 feet of the ramp, on the downstream end, would be used for landing and staging boats.
15	Bank Stabilization	Minor Change in Project Description Corrected bank stabilization linear feet from 30 to 40 feet. Revised text: Under the Selected Alternative, bank stabilization will be installed along the 40 feet of the bank beginning just upstream of the ramp.
17	2.1.1 Off-site Parking Option 1 Skilak Lake Road South	Minor Change in Project Description Deleted text: This option provides one-way traffic through the parking area with 18-foot-wide aisles and 24 angled trailer stalls, measuring 12 feet by 45 feet. New text: This option provides one-way traffic circulation through the parking area with aisles measuring 20 feet wide, and 24 angled trailer stalls measuring 12 feet by 45 feet. Eighteen trees, greater than 12 inches in diameter, would be removed permanently.
37	Wildlife and Fish Species	Updated acres of habitat lost from 1.7 acres to 3.0 acres. Revised and new text: Expansion of the existing Jims' Landing footprint would result in a loss of up to 3.0 acres of habitat used by wildlife and introduce new human disturbance to areas used by wildlife for foraging, breeding and cover. The selected parking option avoids Jean Creek and habitat for brown bears and other species that use Jean Creek for movement and other activities.
38, 39	Threatened and Endangered	Added new text for migratory birds to the Affected Resource Column Migratory birds are present in the project area and use the area for nesting and other activities. Migratory Bird Treaty Act (MBTA). Under

	(T&E) Species and Other Special Status Species	the MBTA, it is unlawful without a waiver to pursue, hunt, take, capture, kill, or sell species of birds listed therein as migratory birds. Revised and added new text in the Anticipated Direct and Indirect Impacts column to update impacts to migratory birds and bald eagles, and update the number of trees that will be permanently removed. There would be negative disturbance impacts to migratory birds during construction of the Jims' Landing Improvements project. However, implementation of the USFWS Land Clearing Timing Guidance for Alaska would reduce impacts to migratory birds to insignificant. The permanent removal of 89 trees greater than 12 inches DBH would alter the aerial canopy landscape or screening of Jims' Landing for bald eagles. The impacts to bald eagles are dependent on the sensitivity of the individual eagles. Sensitivity may be related to visibility of human activity, duration, noise level, area of activity, and an eagle's previous experience with human disturbance (USFWS 2021a). Bald eagles are most sensitive to disturbance during courtship and nest building (generally January), followed by egg laying and incubation and hatching periods (generally March to April). Given the historic human use of Jims' Landing and the dynamic landscape (e.g., changes due to fire and flood events), it is likely that bald eagles nesting in the area are acclimated to the human and natural disturbances at Jims' Landing. Therefore, impacts to bald eagles and their habitat would be discountable and insignificant. In addition, the implementation of the National Bald Eagle Management Guidelines would reduce impacts to insignificant.
40	Vegetation and Habitat	Revised the number of trees to be permanently removed with Off-site Parking Option 1 from 53 to 67 and added new text describing landscaped islands. Approximately 67 trees greater than 12 inches DBH would be removed for this Alternative, and with Off-site Parking Option 1, an additional 22 trees would be removed permanently (18 in the parking lot and walkway areas plus four trees for temporary construction access). The total number of trees permanently removed will be 89. Under the Selected Alternative, landscaped 'islands' would be raised above the existing road and parking grade. These islands would be mounded, reseeded and may include trees in the landscape design.
41	Air Quality and Noise Quality	Revised description of dust palliative use: The parking areas and roads will be surfaced with gravel. A USFWS-approved dust palliative will be used during construction and to treat the gravel roads and parking areas.
41	Geology and Soils	Revised linear feet of root wad installation from 30 ft to 40 feet.

43	Water Resources	Deleted text: Under Alternative C, if the gravel surfaces are paved or otherwise hardened, gravel deposition from roads into waters would cease; this is a beneficial impact. New text: Application of USFWS-approved dust palliatives would reduce fugitive dust, providing a beneficial impact to water resources.
43	Water Resources	Added new text stating that the selected parking option avoids impacts to Jean Creek.
44, 45	Wetlands	Updated temporary and permanent loss of wetland and OHW acres. Added new text describing gravel deposition and an overflow area. Revised and new text: There would be a loss of up to 0.3 acres of wetlands. Impacts below OHW would be 0.07 acres resulting from the boat ramp improvements and root wad installation. Temporary impacts would be 0.03 acres to wetlands and 0.01 acres to waters. Gravel deposition during flood events and fugitive dust would continue to impact wetlands during high use periods. However, impacts related to the construction of would be mitigated with the application of USFWS-approved dust palliatives. Off-site Parking Option 1 results in fewer impacts to wetlands. The Selected Parking Option avoids the Jean Creek riparian and wetland area. An overflow area, approximately 50 feet wide, would be incorporated into the access road to maintain hydrologic connectivity between the Kenai River and the adjacent wetland during minor flood events and reduce gravel deposition into wetlands during these events. This is a beneficial impact for wetlands and non-wetland waters.
54	Table 4-7	Removed reference to watering as a soil stabilization method. Revised text: Reduce erosion through soil stabilization methods that may include application of USFWS-approved dust palliatives for dust control, installing perimeter silt fences, and placing fiber roll wattles.
55	Table 5-7	Based on meeting with the USACE to discuss the Section 404 permit, the following text was deleted. Coordinate with USACE to implement compensatory mitigation to offset unavoidable impacts to wetlands and waters of the U.S. This may include specifying the amount, type, and location of compensatory mitigation. New text added to reflect the results of the meeting:–Compensatory mitigation is not proposed for this project due to the small impact of 0.3 acres the implementation of best management practices and reduction of wetland impacts during the design process. In addition, approximately 0.01 acres of wetland impacts include beneficial impacts such as the installation of root wads to prevent potential bank erosion and create habitat for fish.

59	Section 4.2.2	For reasons described for page 55 above, the following text was deleted and new text added. Deleted text: The project will require compensatory mitigation to offset unavoidable impacts to wetlands and waters of the U.S. A wetland delineation and functional assessment were conducted for this project and are available as separate documents. Compensatory mitigation may include restoration, establishment (creation), enhancement, and, in certain circumstances, preservation. Compensatory mitigation will be finalized during the USACE Section 404 permitting process. New text:–Compensatory mitigation is not proposed for this project because the project purpose is to improve safety at a public facility and to avoid impacts to water quality from seasonal flooding and habitat loss due to bank erosion. Proposed BMPs will prevent negative impacts to water quality, water resources and wetlands during construction to the maximum extent practicable. Please refer to Appendix 2 Wetland Resource Study of the Final EA for more information.
61	State Coordination	The following text was added to update State and Federal Coordination that occurred after the Draft EA was published. The USFWS, ADF&G, and ADNR met on July 1, 2021 to discuss comments, alternatives, and modifications to the preferred alternative. The USFWS and the USACE met on July 7, 2021 to discuss the preferred alternative, wetland delineation, and the CWA Section 404 permit. A pre-application meeting to discuss the KPB Habitat, ADNR Parks, and ADF&G Title 16 Fish Habitat permits was held on July 12, 2021 and included the USFWS, ADF&G, ADNR, and KPB.

Appendix 8 ANILCA Title VIII, Section 810

ANILCA Section 810 Evaluation
Kenai National Wildlife Refuge
Finding of No Significant Restriction to Subsistence Uses

The U.S. Fish and Wildlife Service, acting for the Secretary of Interior, is required by Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) to evaluate the effects on subsistence uses and needs in determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands on national wildlife refuges in Alaska. The evaluation of effects of this proposed action/use on subsistence uses and needs is documented below. If this evaluation concludes with a finding that the proposed action would result in significant restriction to subsistence uses and needs, and we wish to proceed, we must initiate further procedural requirements of Section 810.

Proposed Action/Use

The US Fish and Wildlife Service (Service or USFWS) is proposing to improve the Jims' Landing Boat Launch access and parking situated along the Kenai River on the Kenai National Wildlife Refuge (Refuge). The proposed project includes the following:

- Improve boat ramp conditions for users.
- Improve pedestrian and vehicle safety.
- Provide additional parking capacity for vehicles with and without trailers.
- Provide an off-site parking area on the south side of Sterling Highway.
- Minimize impacts to the Kenai River and the Kenai River wetlands and riparian habitat.

Evaluation

1. Subsistence Resources, Uses and Needs in the Affected Area:

Jims' Landing is located within the Refuge's Skilak Wildlife Recreation Area. This area is closed to most subsistence harvest of wildlife although subsistence activities can occur year-round in areas adjacent to Jims' Landing outside of the Skilak Wildlife Recreation Area. Jims' Landing provides an access point for both Federally-qualified rural residents and the general public to access the Kenai River.

Federally-qualified rural residents rely upon customary and traditional use of natural resources in the Refuge. Moose, caribou, black bear, brown bear, wolf, coyote, wolverine, lynx, grouse, and ptarmigan are hunted generally from late summer through late-winter or early-spring. Fish by volume are likely the most important subsistence resource to federally-qualified rural residents. Although some species of fish are available throughout the year, most fishing takes place during the summer months. Dolly Varden, trout, char, and salmon are harvested with salmon the most important fish resource to subsistence users. Moose are the most significant source of protein among big game. Trapping also occurs on the Refuge and can be an important source of supplemental income to some residents. Species trapped include wolf, wolverine, marten, lynx, muskrat, beaver, and otter. Other activities include

seasonal wood gathering and berry picking

2. Concerns Expressed by Potentially Affected Subsistence Users and/or the State:

The Service received 11 comments from the public on the Environmental Assessment and an additional 71 comments during the public scoping period prior to development of the EA. No persons commenting indicated that they were federally-qualified subsistence users. The Alaska Department of Fish and Game is a cooperator on this project; and coordination has been ongoing with the Alaska Division of Parks and Recreation.

3. Effects of Proposed Action or Use on Subsistence Uses and Needs:

The proposed action would not impact subsistence uses or detract from subsistence needs being met because direct effects on wildlife or habitat resources would be minor and availability or resources for subsistence uses would not be reduced. The proposed action would not increase competition for resources among users, as the project has been designed with a primary objective to improve functionality of an existing access facility and enhance public safety. The preferred alternative would not change the availability of resources by altering their distribution or location. Finally, the proposed action would not reduce subsistence uses and opportunity for such uses because of limitations on access to harvestable resources.

4. Availability of Other Lands for the Purposes Sought to be Achieved:

Jims' Landing is the last take out location prior to entering the Kenai River canyon where Class I - II waters change to Class II - III rapids. No other boat ramp locations are available to meet this need.

5. Other Alternatives Which Would Reduce or Eliminate Use of Public Lands Needed for Subsistence Purposes: None.

Finding

Based on review and evaluation of information described above and in the supporting references below, I have determined that the proposed action will not result in a significant restriction of subsistence uses.

Supporting Documentation

Final Environmental Assessment, Jims' Landing Access Improvements Project, Kenai National Wildlife Refuge.

Alaska National Interest Lands Conservation Act (ANILCA), 1980.

Kenai National Wildlife Refuge Revised Comprehensive Conservation Plan/Environmental Impact Statement. 2010.

Alaska Policy Manual, U.S. Fish and Wildlife Service.

Service Manual - Region 7, U.S. Fish and Wildlife Service.

Subsistence Management for Federal Public Lands in Alaska, Final Environmental Impact Statement. 1992.

Agency Decision

A finding of no significant restriction in subsistence uses completes the Section 810 requirements. The proposed action may be authorized.

Consultation and Coordination

The USFWS invited the Alaska Native Claims Settlement Act (ANCSA) Corporation and Tribal Leaders to comment on or participate in the pre-NEPA scoping (letter dated November 23, 2020), the draft environmental assessment (letter dated May 4, 2021), and participate in formal or informal consultation for this project throughout the planning processes. The Service received comments on the Jims' Landing project from State agency, local organization, and the general public by way of scoping and the formal review process for the Draft Environmental Assessment for the project. The Service has coordinated with the U.S. Forest Service, Alaska Division of Parks and Outdoor Recreation, Alaska Department of Fish and Game, and other interested organizations and publics.

STEPHEN MILLER Digitally signed by STEPHEN MILLER
Date: 2021.09.01 10:42:01 -08'00'

9/1/2021

for Andy Loranger, Refuge Manager
Kenai National Wildlife Refuge

Date

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